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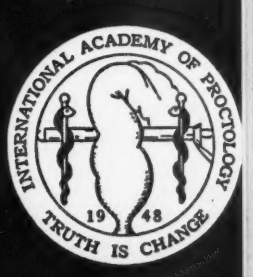

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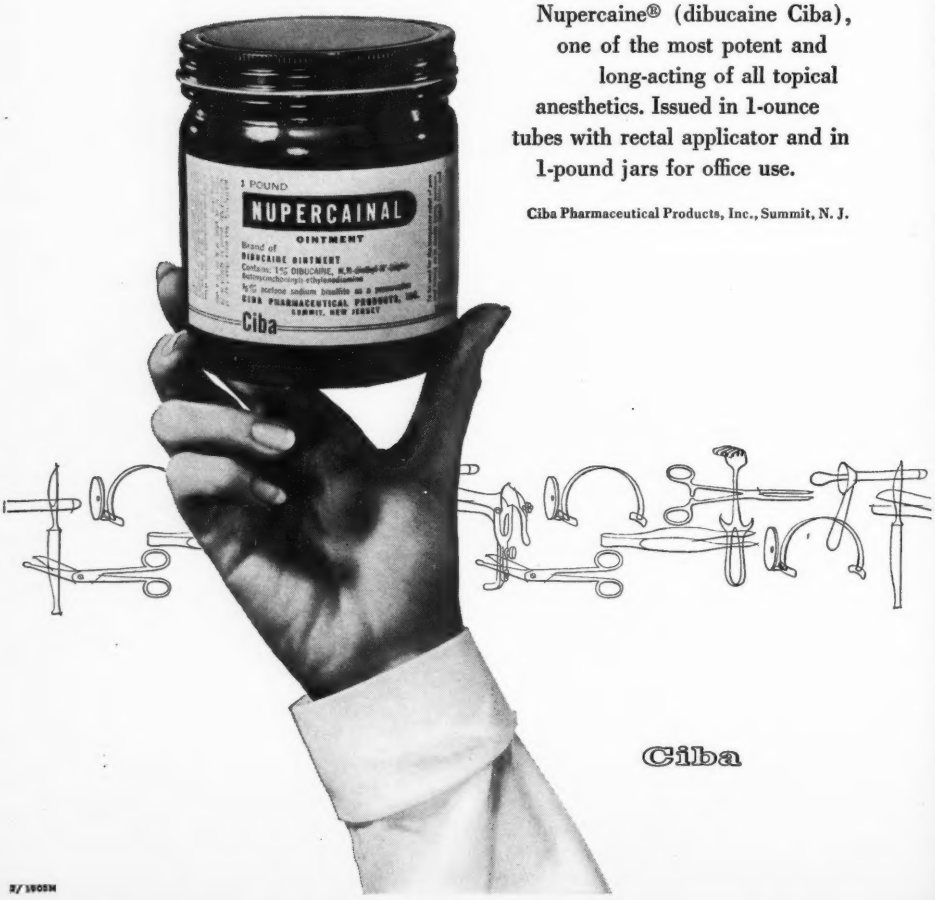

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2. New England J. Med. 235:80, July 18, 1946.

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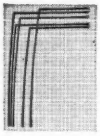

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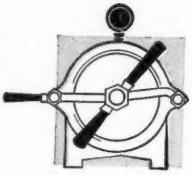

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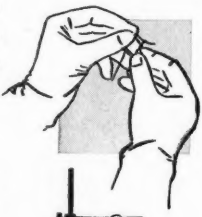

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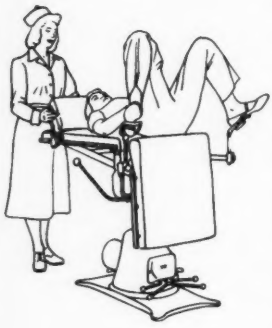

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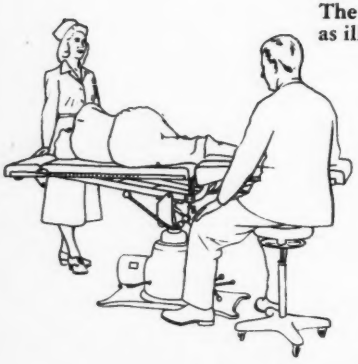

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LETTERS TO THE EDITOR

Fissure-in-Ano Problem

Dear Sir:

I have been puzzled by the problem of removing a fissure-in-ano which lies between two large hemorrhoids and is bounded laterally on each side by them. In the usual procedure, with removal of each pile a strip of skin and mucosa is left between the excised areas. But with excision of the fissure, leaving a strip is impossible, and therefore there results a single, very large raw surface comprising the whole area occupied by the two piles and the fissure.

I would be very interested in an opinion on the best surgical technic in these circumstances.

M. D., New York

For the problem described the best procedure is to remove the fissure area in conjunction with one of the hemorrhoids. In this fashion the area of excision for both fissure and the chosen hemorrhoid is combined.

The second hemorrhoid, on the other side of the fissure, can then be removed separately, thus leaving the usual island of skin and mucosa between the excised areas.

Research in Stress

The following letter from Dr. Hans Selye, Professor and Director of the Institute of Experimental Medicine and Surgery of the University of Montreal, and Dr. Alexander Horava, co-author of the

—Continued on page 74

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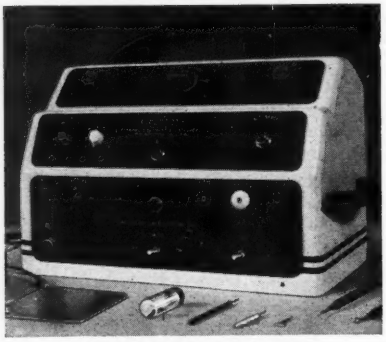

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The Utilization of Dextrose, Levulose, and Invert Sugar by Normal and Surgical Patients

JACOB JOSEPH WEINSTEIN, M.D., F.A.C.S., F.I.C.S., F.I.A.P.†
JOSEPH H. ROE, Ph.D.‡
Washington, D. C.

It is the common practice of physicians to prescribe 5 per cent dextrose in water or saline for a patient requiring intravenous carbohydrates. If carbohydrates are to be used, then one should think of what parenteral carbohydrates achieve.

Parenteral carbohydrates are given because they:

1. Supply calories
2. Spare porteins
3. Minimize protein catabolism
4. Prevent ketosis
5. Replace glycogen deficits and build glycogen stores
6. Prevent hypoglycemia
7. Act as a protective agent in the liver, and
8. Supply direct energy to the central nervous system

Though dextrose is the most frequently used sugar for intravenous therapy, its value as a parenteral carbohydrate is seriously limited by limitations of rate of assimilation, viz. low tolerance rate. The retention of any sugar by the human organism is an expression of these two factors: a. *the renal threshold,* and b. *the rate of removal of the sugar from the blood stream.* When the total blood sugar level reaches approximately 180 mg. per cent with dextrose infusions, the renal threshold is exceeded, and the dextrose is spilled in the urine. The rate of assimilation of dextrose determines the *tolerance rate, the grams of dextrose injected per kilogram of body weight per unit of time without glycosuria.*

In 1915 Woodyatt, Sansum and Wilder,[1] first showed by continuous timed intravenous infusions of dextrose that the tolerance rate for normal man is about 0.85 Gm. per kilogram per hour, or 60 grams per hour without glycosuria for a 70 kilo-

From the Departments of Surgery and Biochemistry of the GeorgeWashington University School of Medicine and Hospital, and the Gallinger Municipal Hospital, Washington, D. C.

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Presented at the Fourth Annual Convention of the International Academy of Proctology, June 7, 1952, Chicago, Illinois.

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gram man. This classic paper has gone through the years without much further question. In 1917 Wilder and Sansum[2] reported a lowered tolerance rate for dextrose in patients with disease of the pancreas and thyroid. Tolerance rates as low as 0.4 to 0.5 Gm. per kilogram per hour were observed in patients with diseases of the pancreas.

However, tolerance rates for dextrose now are reported as approximating 0.5 Gm. per kilogram per hour by Lockhart and Elman.[3] Accepting this figure of tolerance, 1½ hours are necessary for the successful administration of 1,000 cc. of 5 per cent dextrose without glycosuria and diuresis. Further evidence of the low tolerance of intravenous dextrose was shown by Weinstein in the finding of an average 6.2 per cent loss of 50 grams of dextrose infused in normal patients at a rate of 0.75 Gm. per kilogram per hour (60 minutes).[4] These figures help to explain the many 2 or 3 plus qualitative Benedict's tests of urines in patients receiving intravenous dextrose before or after surgery.

With the limitation of low tolerance rate, it becomes almost impractical to prescribe dextrose as the sugar of choice for rapid parenteral carbohydrate therapy. If minimal basal requirements of patients at bedrest are about 1,200 calories, then 6,000 cc. of 5 per cent dextrose infused at a rate of 1½ hours for each 1,000 cc. will take 9 hours for full administration and rentention. Certainly this is too much fluid and too long a period of immobilization for the average patient. If the physician prescribes 10 or 15 per cent dextrose in place of 5 per cent, he is still handicapped by low tolerance rate, for the infusions of any concentration of dextrose are governed by the grams per kilogram retained per hour.

Another disadvantage of concentrated dextrose is the vein damage or sclerosis. This effect is ordinarily directly proportional to the concentration of dextrose injected. A further disadvantage is the associated diuresis with increased glycosuria.

With the above mentioned limitations and disadvantages of dextrose in mind, we have investigated other carbohydrate preparations, levulose and invert sugar, and compared them to dextrose. This paper presents a controlled comparison of dextrose, levulose, and invert sugar in normal subjects and in surgical patients, before and after surgery.

Materials and Method of Study

1. The invert sugar preparation is a hydrolyzed product of sucrose consisting of equal moles of D-glucose (dextrose) and D-fructose (levulose). Solutions of invert sugar in distilled water are stable, colorless, crystal clear, may be stored at room temperature and are nonanaphylactogenic.

2. The dextrose solutions were the same solutions employed in many hospitals.

3. The levulose was either a 5 or 10 per cent solution in water and supplied in standardized solutions in sterile "vacoliter" bottles.

4. Nonoperative surgical subjects or convalescing operative patients, who were clinically considered normal, were used for the comparative tolerance tests of dextrose, levulose and invert sugar. In many instances the same patients were tested with each sugar on different days, spaced several days apart.

Clinically the subjects did not reveal diabetes, for urine and blood sugar estimates before each test, as well as a careful history, showed no abnormal values or findings.

5. Each patient was weighed before the tests.

6. Single infusions of each sugar in 500 or 1,000 cc. quantities were administered as near the desired rates of 0.75 or 1.5 Gm. per kilogram per hour as was technically possible. Each tolerance test with each sugar was executed in a similar manner by the same personnel.

7. Urines were collected before and during the infusion period and for 4 hours after the end of the infusion by voluntary voiding. Each specimen was examined within 4 hours of the collecting period and all specimens were kept under refrigeration.

8. Blood samples were drawn before, after half the sugar was injected, at the end of the injection, and 1, 2, 3 and 4 hours after the infusion. Each sample was analyzed separately; the filtrates were prepared immediately after venipuncture.

9. Patients on the first and second postoperative days were given 100 grams of sugar in distilled water in 1 hour regardless of weight. The rate of infusion was calculated from the weight of the patient.

10. Nitrogen determinations on 24-hour urine specimens were performed to evaluate the effect of invert sugar on nitrogen metabolism. For these studies a group of postoperative patients receiving 300 grams of 10 per cent invert sugar in distilled water daily for 3 to 4 days as the sole source of nutrition was used.

11. Chemical methods employed were: Benedict's quantitative method for total reducing substance in the urine,[5] Roe's colorimetric method for levulose,[6] Folin and Wu's procedure for total reducing substances in the blood and urine,[5] Somogyi's method for total sugar in blood and urine,[7,8] and modified Kjeldahl's method for nitrogen in the urine.[9]

12. Blood pressures, pulse rates, and body temperatures were recorded before, during and after all intravenous infusions.

Results

Comparison of tolerance of 50 grams of dextrose, levulose, and invert sugar in 1,000 cc. of solution.—The 23 subjects in this group were all males; the ages ranged from 13 to 80 years and 5 were more than 65 years of age. Weights varied between 31 and 96 kilograms, and averaged 62.3 kilograms, or 137 pounds. Ten of the same patients were used for both the dextrose and invert sugar tests.

With 50 grams of dextrose in 1,000 cc. of physiological saline at 0.78 Gm. per kilogram per hour, glycosuria was seen in 9 of 10 individuals. Glycosuria averaged 3.1 grams, and ranged between 0.0 and 10.35 grams.[4] One can anticipate, therefore, at least a 6.2 per cent loss of the 50 grams of dextrose infused in the average adult in 1 hour.

The blood sugar curves are moderately uniform, reaching the peak at the end of the infusion (251 mg. per cent), and dropping rather precipitously within the next hour. Two hours after completing the infusion, blood sugar levels were at preinfusion values or slightly below, and remained at this level, or returned to normal, within the next 1 hour.

The urine volumes were 345 to 650 cc. and averaged 480 cc.

Chart I illustrates a composite curve of the total reducing substance in the blood, the glycosuria, the sugar retained, and the average urinary volumes.

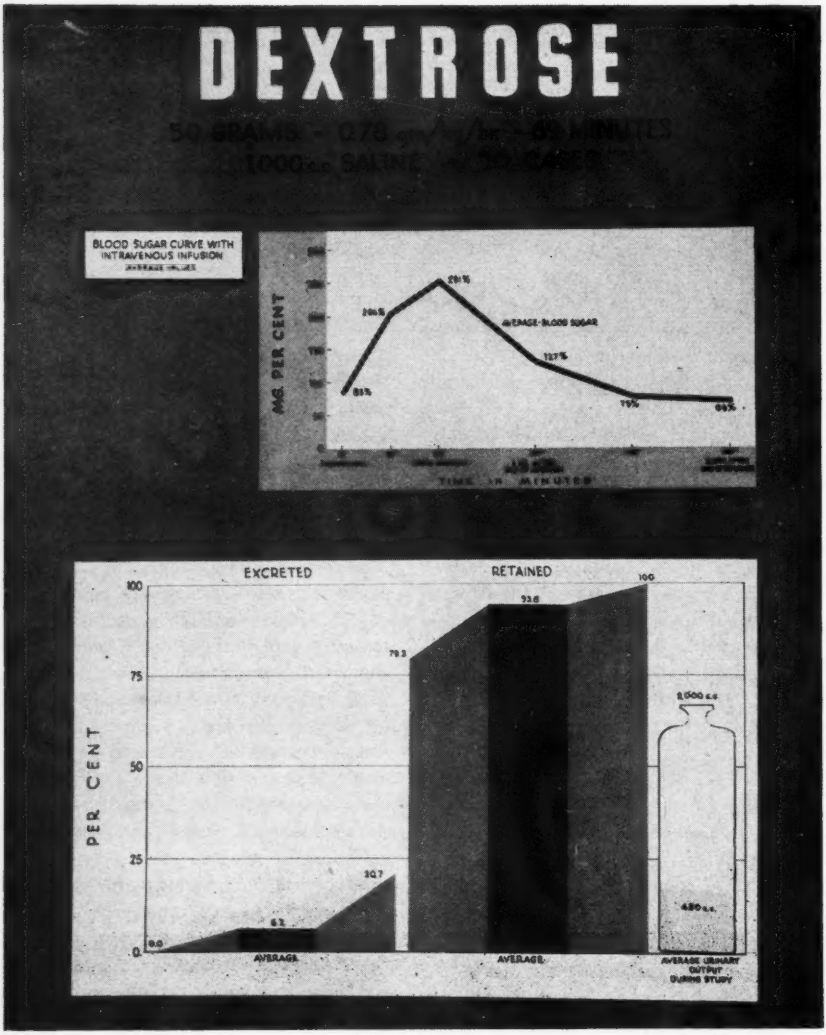
Fifty grams of levulose in 1,000 cc. of distilled water were administered to 12 subjects *at an average rate of 0.76 grams per kilogram per hour,* or in 62 minutes. The average total mellituria was 2.2 grams or 4.4 per cent of the sugar infused. All of the cases "spilled" sugar, the lowest quantity excreted was 1.0 gram and the highest 4.2 grams, thus showing a range of loss for the 50 grams of levulose infused of between 2.0 and 8.4 per cent. Urine levulose values as determined by the Roe method[6] were slightly lower than the total reducing sugar by Somogyi's method.[7] Average urine levulose values with the colorimetric method of Roe[6] were 1.7 grams, the maximum being 3.1 grams. Therefore, when 50 grams of levulose are infused at 0.76 Gm. per kilogram per hour, the anticipated average per cent loss in the urine will be 4.4 and the average per cent sugar retained is 95.6. The mellituria

noted with intravenous levulose indicates a tolerance rate lower than 0.76 Gm. per kilogram per hour.

The urinary volumes with levulose for the total 5-hour study period were between 650 cc. and 2,175 cc. and averaged 1,095 cc. These figures indicate a diuresis with 50 grams of levulose in 1,000 cc. of distilled water.

The total blood levulose at the end of the infusion was 28.8 mg. per cent and the total reducing substance at this point was

Chart I



154 mg. per cent. This latter figure is well below the threshold level for dextrose, and yet the degree of mellituria with levulose is about equal to that obtained with 50 grams of dextrose at the same rate. The inference of this finding is a lower renal threshold for levulose than dextrose.

Chart 2 gives the total reducing substances in the blood, the degree of levulosemia, the per cent sugar lost and retained, and the average.

When 50 grams of invert sugar in 1,000 cc. of saline were given in 34 minutes, that is, at 1.5 Gm. per kilogram per hour, or at twice the rate of infusion for dextrose and levulose, practically no glycosuria occurred—only 0.4 grams of total reducing substance were recovered in the urine.[4] There was a 99.2 per cent retention, therefore, of the 50 grams of invert sugar infused in about 30 minutes. The maximum loss was 1.8 per cent, and was only equal to the lowest amount spilled with levulose and dextrose. Six of the 10 subjects had less than 0.5 grams of urinary sugar. The average urinary volume was 393 cc. and the volumes for the 5 hour study period ranged between 225 and 615 cc. Five of the 10 patients showed urinary volumes of less than 393 cc.

Maximal blood sugar levels at the end of the infusion period averaged 211 mg. per cent; the lowest value at this period was 188 mg. per cent, and the highest value observed was 232 mg. per cent. Blood sugar levels decreased to preinfusion levels without a hypoglycemia "dip" within one hour after infusion.

The above described data show that 50 grams of invert sugar may be given twice as fast as the same quantity of dextrose or levulose with 99.2 per cent retention of the invert sugar in contrast to a retention of 93.8 per cent for dextrose and 95.6 per cent for levulose. Therefore, invert sugar is better utilized than either dextrose or levulose.

The average urinary volume with dextrose was 480 cc., with levulose 1,095 cc., and with invert sugar 393 cc. It was found that no accelerated urinary output of fluid ensued when dextrose or invert sugar were administered intravenously in a saline vehicle. On the other hand, levulose in water did exercise a prominent diuretic effect. There is usually a direct linear relationship between glycosuria and urinary volume. These differences in urinary volume between dextrose and invert sugar in saline and levulose in water show the hydrating influence of saline in contrast to the diuretic effect of water.

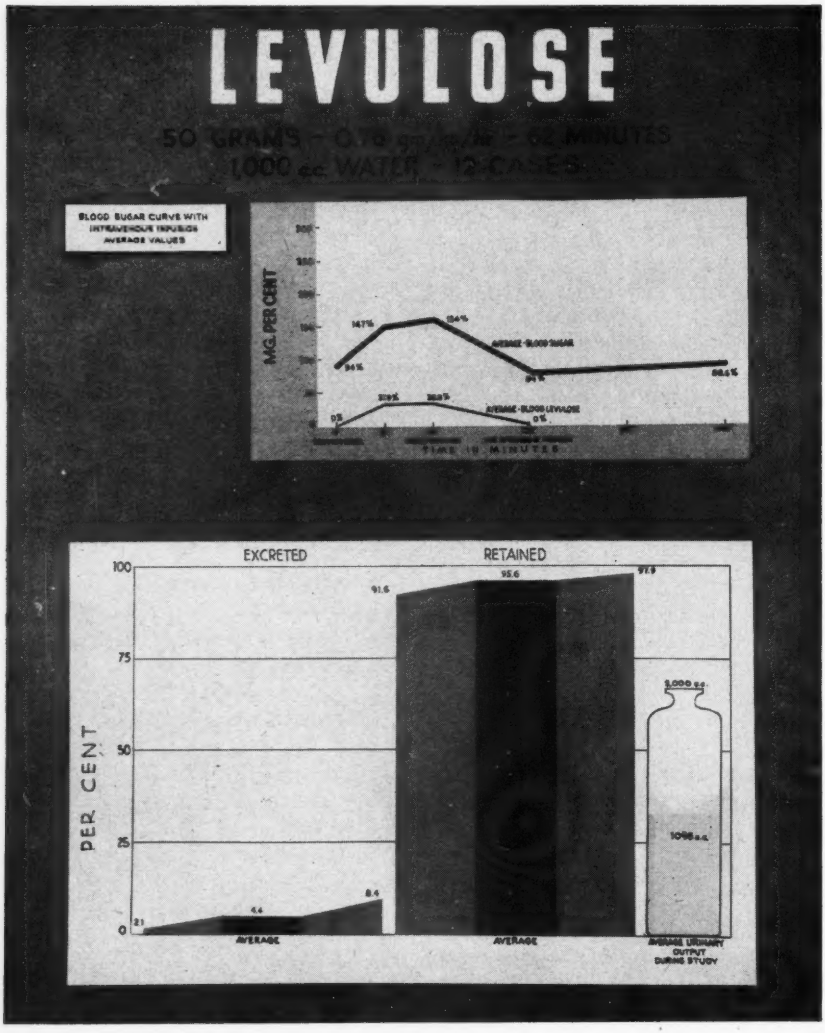
Comparison of tolerance of 50 grams of dextrose and invert sugar in 500 cc. of distilled water.—*Nineteen patients were given 50 grams of dextrose in 500 cc. of distilled water at an average infusion rate of 1.57 Gm. per kilogram per hour.* The grams of sugar excreted fluctuated between 0.7 and 16.3 and averaged 9.1 grams.[10] Eleven of the 19 patients lost more than 9.1 grams. Thus, one can expect that at least half the patients given 50 grams of dextrose in 30 minutes will lose more than 9.1 grams. The average amount retained was 81.7 per cent of the 50 grams infused in 29.5 minutes, and since losses may reach 33 per cent, the patient may only retain 67 per cent of that injected. Urinary volumes averaged 624 cc., and reached 1,125 cc. in one instance. Blood sugar levels reached maximal figures of 294.5 mg. per cent.

It is obvious that 1.5 Gm. per kilogram per hour is too fast a rate for the injection of dextrose. The degree of glycosuria, when 50 grams of dextrose in water are infused at 1.5 Gm. per kilogram per hour, is three times greater than when 50 grams of dextrose in saline are given at 0.75 Gm. per kilogram per hour.

When 50 grams of invert sugar in 500 cc. of distilled water were infused at 1.59 Gm. per kilogram per hour in 15 individuals, the average urinary sugar was 0.4 grams and values varied between 0.0 and

1.1 grams. The per cent utilized, 99.2, was the same as described before for 50 grams of invert sugar in 1,000 cc. of saline at a similar rate. Average urine volumes were 263 cc. as compared to 393 cc. in the previous group with saline. The figures are not distinct enough to draw conclusions as to the hydrating effect of saline versus the dehydrating effect of distilled water. No difference in degree of utilization is found with 50 grams of invert sugar in 1,000 cc. of saline or in 500 cc. of dis-

Chart 2



tilled water, at equal rates of infusion.

Comparison of the utilization of 50 grams of dextrose and 50 grams of invert sugar in 500 cc. of water infused in 30 minutes gives conclusive evidence that invert sugar is retained much better by the body; 99.2 per cent of the invert sugar is retained in contrast to 81.7 per cent for dextrose. The average per cent dextrose lost with the 50 grams of dextrose injected was 18.3 per cent, or 36 calories, which is one-sixth of the total caloric value of 50 grams of dextrose. On the other hand, with invert sugar the average loss with 50 grams infused in 30 minutes was 0.8 per cent, only 2 calories. The clinical advantages shown by this caloric comparison are obvious.

Another important advantage in using invert sugar in place of dextrose is shown in the difference in urinary volumes excreted. Those patients receiving dextrose lost an average of 624 cc. as compared to 263 cc. for those infused with invert sugar, or twice as great a urinary diuresis. These figures validate the known observation that glycosuria causes a concomitant diuresis.

Comparison of tolerance of 100 grams of dextrose and invert sugar in 1,000 cc. of distilled water in one hour at 1.5 grams per kilogram per hour.—*Glycosuria with infusions of 1000 grams of dextrose in 1,000 cc. of distilled water in 1 hour averaged* 13.3 grams and varied between 3.3 and 30.2 grams.[10] Seven of the 15 patients wasted more than 13 grams; 2 lost 12 to 13 grams, and 6 showed urinary sugars of less than 12 grams. The average per cent of sugar retained was 86.7, and in some instances was as low as 69.8 per cent.

Urinary volumes were consistently higher, as would be expected, with the increased water intake and the increased glycosuria. The average urine volume excreted was 1,477 cc., which is equivalent to the total fluid intake (1,000 cc. by vein and 500 cc. orally during the infusion). Urinary volumes varied between 350 and 2,265 cc. Since many patients lost more than the total fluid intake, depletion of the patient's body fluid occurred. An example is seen in the patient who had a urinary output of 2,265 cc.; he depleted himself of 765 cc. of fluid. Such fluid losses probably also withdraw sodium and potassium and may, if persistent, produce serious fluid and electrolyte imbalances. Some unpredictable variations exist between the degree of glycosuria and urinary diuresis; however, in general there is a rather close direct relationship. Blood sugar levels are consistently high with 100 gram infusions of dextrose. Average maximal blood sugar levels at the end of the infusion were 291 mg. per cent, about 110 mg. per cent above the average renal threshold level.

One hundred grams of invert sugar in 1,000 cc. of distilled water were given in 58 minutes to 34 patients with an average urinary sugar excretion of 2.4 grams.[10,11] The glycosuria ranged between 0.0 and 9.6 grams. Twenty-six, or approximately 75 per cent of this group lost less than 2.4 grams.

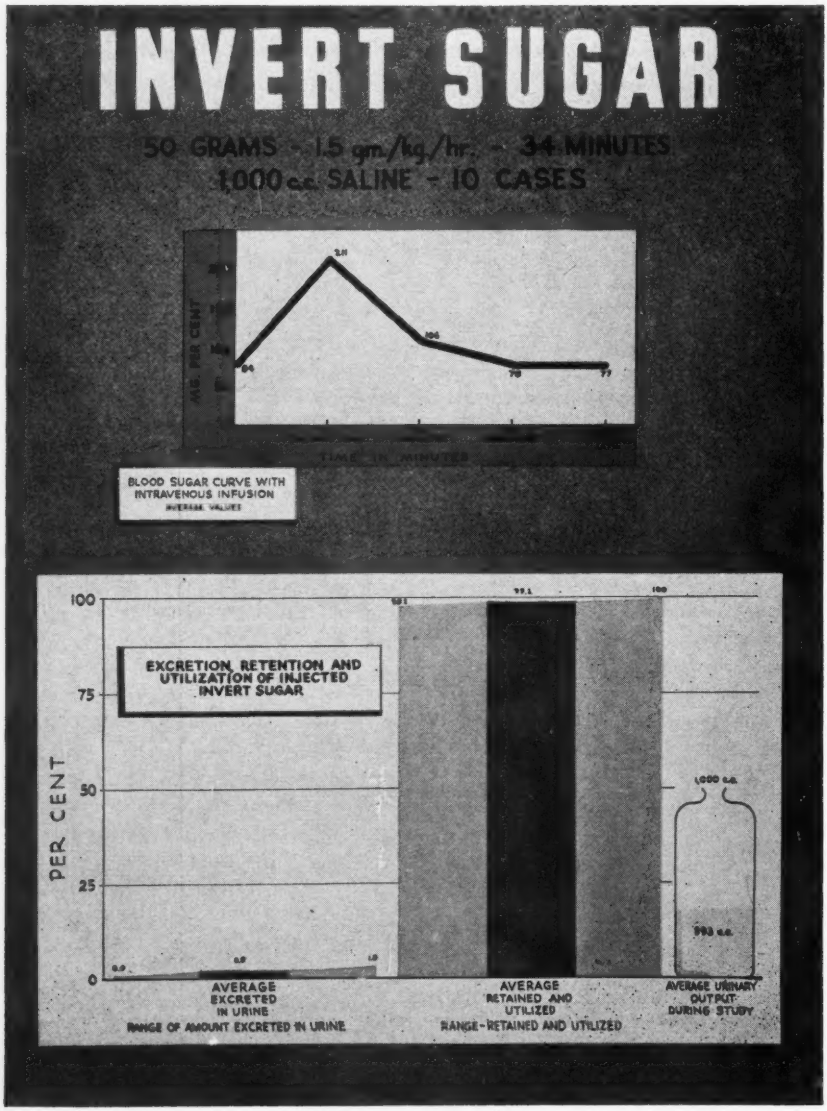
The urinary glycosuria was further studied as to the fractions of dextrose and levulose present in the total urinary sugar. The total glycosuria averaged 2.4 grams, and the total levulosuria was 0.7 grams. Therefore, 1.7 grams of dextrose were found in the urine. The levulose fraction (0.7 grams) constituted 29 per cent of the total urinary sugar.

Invert sugar consists of equal parts of dextrose and levulose. When 100 grams of invert sugar are administered intravenously at 1.5 Gm. per kilogram per hour, each separate sugar is administered at 0.75 Gm. per kilogram per hour. Previous data in this paper showed little difference in the degree of glycosuria between 50 grams of dextrose and levulose at 0.75 Gm. per kilogram per hour when given separately. If both urinary values for each sugar were combined we would expect a loss of about 5 to 6 grams of total sugars, but the total

glycosuria with 100 grams of invert sugar (2.4 grams) was less than that found when 50 grams of dextrose or levulose were given separately.

These findings infer a better utilization of dextrose and levulose administered simultaneously as invert sugar than when given separately. Fletcher and Waters[12]

Chart 3



have reported from animal experimentation that levulose administered intravenously exercises a catalytic influence on the utilization of dextrose. Unpublished data of Weinstein and Roe have confirmed the stimulatory effect of levulose on the utilization of dextrose as shown by a lowering of the dextrose tolerance curve.

With 100 grams of invert sugar in 1,000 cc. of water the average grams of sugar lost was 2.4 or 9.6 calories; with dextrose the grams lost was 13.3 or the equivalent of 53.2 calories. If there were administered to a pateint 3 infusions of dextrose per day, at this rate, he would probably lose 40 grams of sugar, or 160 calories, which is 80 per cent of the amount he would receive in one infusion of a 5 per cent solution of dextrose. In some instances the losses would equal 90 grams or 360 calories. In a postoperative patient, the extra 160 to 360 calories saved by giving invert sugar might make the difference between positive or negative caloric balance, and the difference between ketosis or the absence of ketosis.

With the administration of 100 grams of invert sugar in one hour the urinary sugar loss was less than, or just equal to, that observed with 50 grams of dextrose in about the same period; therefore, one may gain 50 extra grams of sugar when invert sugar is given with no additional urinary loss. Since, gram for gram, dextrose and invert sugar have the same caloric value the patient gains an extra 50 grams of sugar, or 200 calories, when 100 grams of invert sugar are used in place of 50 grams of dextrose. It is therefore, the opinion of the authors, that 10 per cent invert sugar can be prescribed wherever one had previously prescribed 5 per cent dextrose.

No vein damage or thrombosis is seen with 10 per cent invert sugar at the rates prescribed herein (1 hour).

Comparison of tolerance of 150 grams of dextrose and invert sugar in 1,000 cc. of distilled water at 1.5 grams per kilogram per hour.—*The average urinary glycosuria with 150 grams of dextrose in 1,000 cc. of water infused in 94 minutes was 16.9 grams, or 11.5 per cent of that injected.*[10] The grams of sugar in the urine were not less than 11.8 and the greatest value observed was 25.5 grams. Urinary volumes ranged between 900 and 1,950 cc. and averaged 1,278 cc.

In this series the patients were also permitted 500 cc. of fluid by mouth during the infusion. The average urinary volume, therefore, did not exceed the intake, and abnormal diuresis was not noted as was seen before with 50 and 100 grams of dextrose at similar rates of injection. In this series 88.6 per cent was the average amount of dextrose retained.

When 150 grams of invert sugar were infused in 89.5 minutes, to twenty-one adults, the average glycosuria was 5.5 grams.[13] Thus there was a 3.6 per cent loss of the total sugar injected. Glycosuria values ranged between 0.5 and 11.8 grams. The average urinary volume was 1,096 cc. This urinary response is considered normal for healthy subjects given fluids rapidly by mouth or vein.[43]

Fractionation of the reducing substance in the urines revealed that levulose made up 11.8 per cent of the total reducing substance. Though the levulose fraction is a smaller proportion of the total glycosuria in this series than in the series in which patients were given 100 grams of invert sugar, the inferences are the same—a better utilization of both dextrose and levulose when administered together. That levulose is better retained than dextrose has been reported.[14]

Blood sugar curves with this large dose of invert sugar showed the following average figures in mg. per cent; before the infusion, 89; after 75 grams of sugar, 238; at the end of the infusion, 268; 1 hour after the end of the infusion, 78; and 2 hours later, 85. No hypoglycemic

dip was observed and the circulating sugar was rapidly removed from the blood within one hour after the end of the infusion. The levulose values at the same period of the infusion were 0, 29, and 33 mg. per cent, and one hour after the end of the infusion no levulose was detected in the blood. The levulose content at the highest level was 12.3 per cent of the total reducing substances in the circulating blood. These figures parallel the findings in the urine and again give evidence for the better utilization of both sugars when levulose is a component of the infusion mixture.

One hundred and fifty grams of invert sugar in 1,000 cc. of water may be given in 89.5 minutes with 96.4 per cent retention; on the other hand, an equal amount of dextrose in the same volume of water may be given at the same rate with 88.6 per cent retention. The urinary volumes are slightly greater with dextrose.

Due to the unusual length of this monograph, publication will be in two sections. Full details relating to Charts 1, 2, and 3 will be found in the second section, June, 1953 issue.

Annual Convention of the International Academy of Proctology

All physicians are cordially invited to attend the Fifth Annual Convention of the International Academy of Proctology to be held at the Plaza Hotel, New York City, May 29, 30 and 31st, 1953, directly preceding the American Medical Association Meeting. The meeting this year may be extended to include a Surgical Clinic and Seminar at Jersey City Medical Center under the direction of Dr. Earl Halligan. If arrangements are completed to include this day, the "Wet Clinic" and Seminar will be on May 28th. An extensive, all-day Motion Picture Seminar of Proctologic Surgery (including office techniques) will be held on May 31st. All scientific papers will present the latest developments in proctology and gastroenterology.

Because general practitioners, as well as gastroenterologists and proctologists, face proctologic problems in their daily practice, much of the program has been planned to answer their questions.

There is no fee for attendance at the Annual Convention of the International Academy of Proctology. These Conventions, as well as all other activities of the Academy, are directed toward the further development of proctology. All physicians interested in proctology are therefore invited and welcomed to the Annual Meeting.

The program will be available in the near future, upon request to the Executive Offices of the International Academy of Proctology, 43-55 Kissena Blvd., Flushing, New York.

Internal Hemorrhoids and Rectal Prolapse

New Clamp Technique for Injection Treatment — with New Instrument

H. I. BIEGELEISEN, M.D.
New York, N. Y.

Sclerotherapy as applied to hemorrhoids is fairly well known at the present time. This sclerosing method has received wide acceptance by the general practitioner as well as the proctologist. While it is difficult to appraise the percentage of hemorrhoid cases that are handled by injection today, it is safe to say that between 50 and 75 percent can be treated by this method with present technics, accompanied in some cases, by minor office surgery. Up to now, therefore, approximately 25 percent were considered unsuitable for injection treatment. The new technic proposed by the author will alter these percentages considerably.

Originally in the hands of "quacks" and "irregulars," the injection method received medical endorsement over 30 years ago. Since then, and with the advent of safer sclerosing agents, its acceptance has increased. Blackwood is said to have introduced this method in 1866.

Etiology *Fascial Weakness* Like varicosis elsewhere, as pointed out by the author[4, 5], internal hemorrhoids has a background of inherited fascial weakness and the family history often exhibits this syndrome. Thus the parents may suffer from varicose veins and the brothers or sisters may have herniae or other fascial disorders. Hereditary predisposition to weak fascia, therefore, plays a major role in the appearance of hemorrhoids or rectal prolapse.

Other causes are frequently mentioned, each one depending on the proponent's viewpoint. The obstetrician may feel that pregnancy is responsible for the development of hemorrhoids. The gastroenterologist emphasizes the importance of constipation or diarrhea. Man's upright posture is correctly blamed for the increased venous pressure in the hemorrhoidal vessels. Venous obstruction as in liver cirrhosis, or infection like cryptitis, is also mentioned as an etiological factor.

Diagnosis The recognition of hemorrhoids is simple for the average practitioner. The commonest symptoms are pain and bleeding. The pain is often due to thrombosis of external piles. Hemorrhoidal bleeding must not be confused with bleeding from upper bowel lesions. A fresh red color is an important sign, but the most definite diagnostic sign is the location of the offending blood vessel by speculum examination. In the absence of such visualization, the operator must always infer that the bleeding is hemorrhoidal only because it cannot be traced to any other area.

Inspection of the anal region will often make the diagnosis, especially where prolapse has occurred and the internal piles covered by mucous membrane are visible at the anus as a protruding mass. Digital examination with a wide sweeping motion of the finger will disclose internal hemorrhoids as a soft, boggy mass with a char-

acteristic sensation lying within the rectum. The diagnosis is usually made by anoscopic examination with one of the various rectal speculae. The author prefers the Brinkerhoff type for its convenient slide opening.

Under anoscopic inspection, hemorrhoids are readily discerned as bulging, rounded, venous masses lying within the ano-rectal canal and having various configurations. In some cases, the veins may be discernible as blue-walled bulging varices. In other cases, glistening whitish or pinkish bulges, which are compressible, may be seen. Various degrees of prolapse can be noted during this examination. With marked stretching of the rectal lining, the hemorrhoidal masses may be moved for a considerable distance by the motion of the speculum as it is advanced or withdrawn.

Anatomical Basis for Previous Failures of Injection Treatment

Anal Canal The anus is the oval aperture of the anal canal. The anal canal is below the rectum and is the terminal portion of the large intestine. It averages 1.2 inches in length and has a curve downwards and backwards. The canal is lined by both true and modified skin up to the ano-rectal line. It is surrounded by the internal sphincter at one end and the external sphincter at the other.

The anal canal is supported by the levator ani muscles. At the point where the internal sphincter overlaps the external sphincter muscle is a boundary called the white line of Hilton. This line is at the junction of the middle with the lower third of the anal canal. The whole area, then, is 3 cm. long and curved backward. It is this curvature which is responsible for one of the difficulties in injecting internal hemorrhoids through the rectal speculum.

Relations of Anal Canal As stated above, the anal canal is surrounded by the external and internal sphincter muscles. Posteriorly, the canal is in relation to the levator ani muscles and the anal coccygeal gland. Laterally the canal is separated from the ischiorectal fossae by the anal fascia. Anteriorly, in the male, is found the urethral bulb, the urogenital diaphragm, the prostatic apex, the anterior fibers of the levator ani, and the perineal body. In the female, one notes anteriorly that the lower end of the canal is separated from the vagina by the fibromuscular perineal body. As previously stated, the sphincter muscles are present in every direction because they encircle the canal.

Internal Hemorrhoids Internal hemorrhoids are generally one of three types: the vascular type, which has a red raspberry appearance in which the vascular tissue predominates, the polypoid type in which the tumors are pedunculated, the top being larger than the base, and mixed types.

In most cases, internal hemorrhoids are varicosities of one or more radicles of the superior hemorrhoidal veins. These arise above the anorectal line and are covered by mucous membrane. In other cases, they may develop from the middle and inferior hemorrhoidal plexuses and be found lower down in the anal canal.

Rectum The rectum connects the sigmoid with the anal canal. Its wall has four layers, the peritoneal, muscular, submucous, and the mucosal. It begins opposite the third sacral vertebra and going down it curves around the concavity of the sacrum and coccyx and joins the anal canal at the anorectal line. The length is six inches (15 cm.) when stretched out at autopsy. In the living, the average is but 5.4 inches due to the curvature present. It is smallest at the rectosigmoid junction below which it expands. At its lowest point where it joins the anal canal, it again becomes narrow. The levator ani muscles and external sphincter muscles are the chief support of the rectum and anus.

Relations of Rectum The rectum is in

relation posteriorly with the hemorrhoidal vessels, pyriformis muscle, sacral nerves, sacrum, coccyx and levator ani. In the male, anteriorly it is adjacent to the bladder, triangular ligament, prostate and seminal vesicles. In the female it is in relation anteriorly with the small intestine, the uterus and vagina, and laterally, with the ureters, internal iliac artery and branches, obturator internus muscle and nerve.

Curvatures Laterally the rectum presents two curves: the upper sacral and the lower perineal. The upper is concave anteriorly and the lower is concave posteriorly. From the anterior aspect there are three lateral curves, two on the left side and the third, which is in the middle, is on the right side.

Current methods of injection treatment for internal hemorrhoids and prolapse fail to take into consideration the anatomical factors outlined above. This limiting effect on angles of injection presented by the curvatures of the anorectal tube are not appreciated. Neither is the importance of the neighboring structures in relation to the origin and correction of these defects fully understood. This is particularly the case in rectal prolapse which has presented a special problem in effective sclerosing treatment.

Prolapse and Procidentia Prolapse in the anal area is the abnormal descent of the rectal mucosa through the anus. Procidentia is the descent of the rectum with all its coats through the anal orifice. There may or may not be protrusion in either of these instances. The distinction, therefore, merely lies in the number of

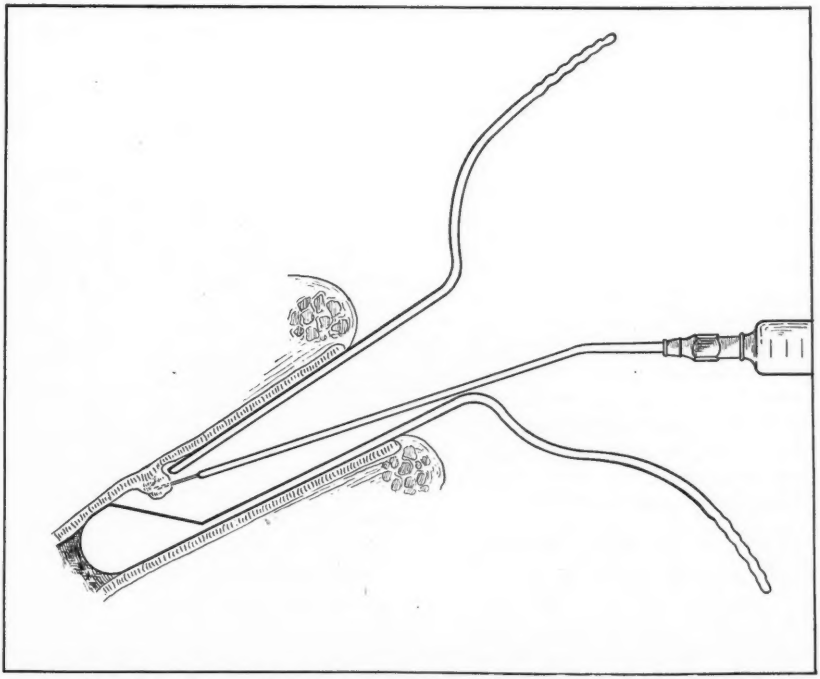


Fig. 1. Old technic. Note small angle presented by needle to pile. Injection is limited to submucosa.

coats of bowel involved; a prolapse being a downward mucosal sliding and a procidentia, a slipping of the entire wall. The area involved may be located anywhere from the modified anal skin to the rectum or sigmoid. If extensive and high enough, an actual intussusception or invagination may occur. Prolapse occurs more often in children and procidentia is seen more often in adults.

A prolapse may become a procidentia. The defect in the latter is in the fascial, muscular, or peritoneal supports of the bowel. Children develop prolapse often because of the loose fixation of the perirectal tissues and the vertical course of the rectum. In adults an extensive procidentia is analagous to a sliding hernia.

Internal prolapse, which does not protrude, feels like a double layer of mucosa to the examining finger. The wall of the anus or rectum is palpated as intact in spite of the reduplication or looseness of the mucous membrane. When the prolapse protrudes, it is considered an external prolapse and may occur with each act of defecation. In the more advanced stages, it remains out more or less constantly unless it is reposited manually. In extreme cases, it may be impossible to reposit the prolapse, the parts becoming thickened and altered histologically.

A procidentia which protrudes is diagnosed by a series of circular folds and the whole mass is larger and more extensive than a prolapse. An internal procidentia should be sought for by digital examination in the squatting or sitting position. The mass is then felt as involving the entire rectal wall. Also, the extrusion is thicker, firmer and movable.

Current Injection Technic The usual technic recommended for the injection treatment of hemorrhoids is as follows. A well lubricated speculum which varies with the preference of the operator is inserted into the anal canal. The most popular speculum in average use is either the Martin or Brinkerhoff type. The hemorrhoidal tissue is exposed and the needle is inserted into the upper portion of the pile mass for a distance of ⅛ to ¼ of an inch. Most authors describe this as a submucosal injection. While there are some variations, this is the usual technic that is universally used for the injection treatment of internal hemorrhoids.

While this method will deal effectively with simple hemorrhoidal masses, it will generally fail where the condition is advanced and especially where rectal prolapse has occurred. This fact has been accepted by the medical profession for many years complacently and the condition of rectal prolapse, has actually become a contraindication to injection treatment. There has not been a proper appreciation of the fact that failure to extend the scope of sclerotherapy in these conditions was due to the physical impossibility of performing deeper injections with the current technic now in vogue.

Curiously enough, older operators were aware of the fact that deeper injections were efficacious for rectal prolapse in children. Hanes[1] in 1928 suggested injecting the perirectal structures on both sides of the rectum using 1:3000 hydrochloric acid. Gabriel,[2] in 1932, also injected perirectally using a quinine-sulfuric acid mixture. Potter,[3] in 1933, worked under anesthesia and inserted a long needle through the perianal skin about ½ inch lateral to the anal margin for a distance of two to three inches. It is surprising that modern technicians working on adults did not appreciate the significance and value of deeper injections and accepted the limitations of the current injection method without question.

Defects of Current Injection Method Anatomically, the author has demonstrated that the anal and rectal canals are built upon a series of curves. Furthermore, the walls of these canals depend for their support upon extrinsic structures including

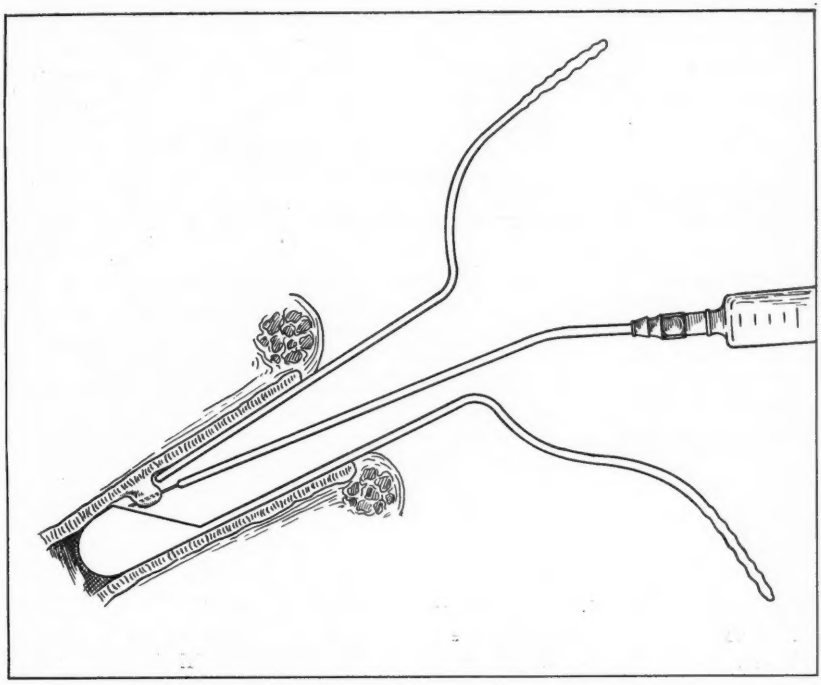


Fig. 2. Current technic. Needle transfixes file on attempting injection.

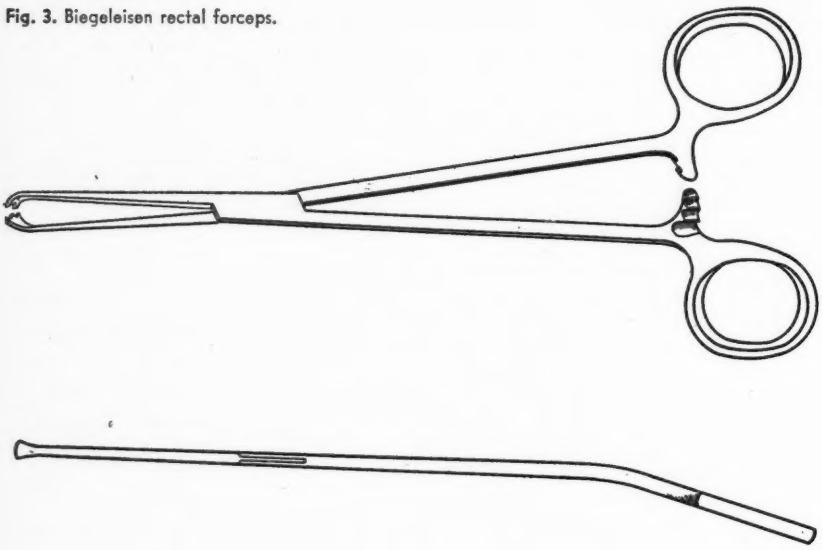
fascial and muscular supports. The submucous coat of the rectum forms a bed upon which the mucosa rests and because of its loose attachment permits the mucosa to glide easily over it. It should be obvious that it is important to inject deeply enough to reach the supporting structures of these canals. This is impossible with current injection technics.

The series of curves are, in themselves, a barrier to deep penetration of anorectal tissue. The needle is always aimed at a curving surface. Furthermore, the mass that bulges into the opening of the rectal speculum is usually composed only of mucosa with or without submucosa. Coupled with this is the fact that the mass is attached in a loose fashion to the underlying structures and is therefore movable and difficult to transfix. It is a common experience for operators to pierce the pile completely in their efforts to infuse these structures with sclerosing fluid.

The most important drawback in current therapy, however, is the confining space of the rectal speculum. A glance at the Brinkerhoff instrument, as an example, will demonstrate this clearly. Using a 3 cc. syringe and a hemorrhoidal needle, it will be noted that the needle lies in a cone-shaped space which becomes narrower at the proximal end of the instrument. The operator must work within a canal whose orifice may be ¾ to one inch in diameter, depending upon the size of the speculum. This opening narrows to ½ inch or slightly more at the portion of the slide where most injections are given.

Simple geometry will demonstrate that the angle of injection which the needle

Fig. 3. Biegeleisen rectal forceps.



makes, using the floor of the speculum as a longitudinal axis, averages 15 degrees (Fig. 1). As the slide of the instrument is pulled back to expose a greater slot, the angle that is obtainable for injection purposes can be increased to about 20 degrees. Examination of Fig. 1 will demonstrate that a needle penetrating a hemorrhoidal bulge at an angle of 15 to 20 degrees will be placed submucosally or will penetrate the mass completely and come out on the other side (Fig. 2). The necessary deeper injections cannot be made under these conditions.

The physical limitations of the anoscope plus the anatomical difficulties outlined above made it necessary to devise a new technic. It was felt that the deeper injections made possible with this method would control advanced hemorrhoidal cases and rectal prolapse more effectively.

Author's Technic This is best performed with the aid of an assistant. The author prefers the Brinkerhoff speculum. The well lubricated speculum is inserted and a light source, preferably a floor lamp, is placed in position. The offending hemorrhoid or rectal mucosa is grasped with the author's special clamp* (Fig. 3). This is a modified, long, slenderly constructed Allis-type clamp with an angulated handle. Grasping the pile is facilitated with this instrument without undue tissue trauma. The handle, which is bent away from the speculum, does not interfere with the long needle that lies alongside the clamp for injection treatment.

Traction is now made so that the tissue is pulled down and at the same time centered in the speculum. This procedure is demonstrated to the assistant to whom the operator relinquishes the clamp. It requires some manual dexterity to bring the mucosal protrusion into the center of the speculum area because unpracticed efforts usually result in bringing the handle of the clamp into the central area rather than the tissue within the grasp of the forceps. With a little experience, however, it will be found that by swinging the clamp on an imaginary axis located near

* Kny-Scherer Company, New York City.

the handle, the jaws of the instrument can be swung into the center of the speculum by pressing the handle against the wall of the anoscope. This maneuver is executed while traction is being exerted so the end result will be that the offending pile or mucous segment will be pulled down and centered in the longitudinal axis of the anoscope where it is held by the assitsant (Fig. 4).

This maneuver leaves sufficient room for the passage of the needle and also for visualization of the tissue which is to be injected. At first the operator's head must be moved aside to demonstrate the field of operation to the assistant. Because only one head may be in position at a time, the assistant must now permit the operator to resume his observation as he proceeds. The needle is then inserted at the point where traction pulls the mass away from the rectal wall. It will be found possible to insert the needle deeply and accurately into the base of the actual protrusion in all rectal quadrants. In cases of prolapse, either of the mucosa or hemorrhoids, it may be necessary to inject either in the muscular layer of the anorectal wall or into the perirectal ligaments or fascia.

There is a similarity between this technic and surgery that must be emphasized. In most surgical procedures the hemorrhoid is grasped and held taut; then the pedicle of the pile is treated in a variety of fashions such as cutting, cauterizing, or tieing.

In this modified injection procedure, the pile is similarly caught with a special clamp and held taut while the pedicle is correspondingly treated by injection. Thus the base of the hemorrhoid is attacked as in the surgical approach with comparably satisfactory results. Previous injection technics did not achieve this.

Treatments are given once weekly with the clamp method of injection. With increasing dexterity on the part of the operator, there will be little or no reaction to this technic. Experience has indicated that treatment once a week with the clamp method keeps the patient comfortable. In the event ordinary submucosal injections are interspersed with the clamp technic, then treatments may be stepped up to twice a week for the simpler type of injection treatment.

It will be found that the number of treatments necessary for hemorrhoids can be reduced with this technic. Thus where a moderate case of hemorrhoids would previously require 10 to 15 injections, this technic may require only 5 to 8 treatments, cutting the injections to half.

Solutions After a long experience with many solutions, it has been found that phenol, 5 percent, in oil of sweet almond leads the list for all around general use. Next in usefulness is quinine and urethane or quinine and urea hydrochloride, 7 percent. Either of these quinine salts are well tolerated and also act as local anesthetics. Recently, Sotradecol* has been advocated for hemorrhoidal injections and is receiving favorable mention. It is a varicose vein solution that is being adapted to hemorrhoidal use and is relatively safe. It goes without saying that individuals who may be alergic to quinine should be treated with one of the other solutions. A strong word of caution must be noted at this time in regard to the use of phenolized oil. It must never be injected intravenously. It is important to aspirate when using this product so as to make certain that one is not in a vascular channel. Near fatal or fatal results may occur if such an intravenous injection is made. With the other two solutions intravenous injection will produce no harmful results. They are therefore safer for the average practitioner to use.

Untoward Results Mention has been made of allergy and to this may be added three other complications.

First is the occurrence of oleoma. This is a circumscribed indurated nodule that follows the injection of phenolized oil in

* Wallace & Tiernan Laboratories.

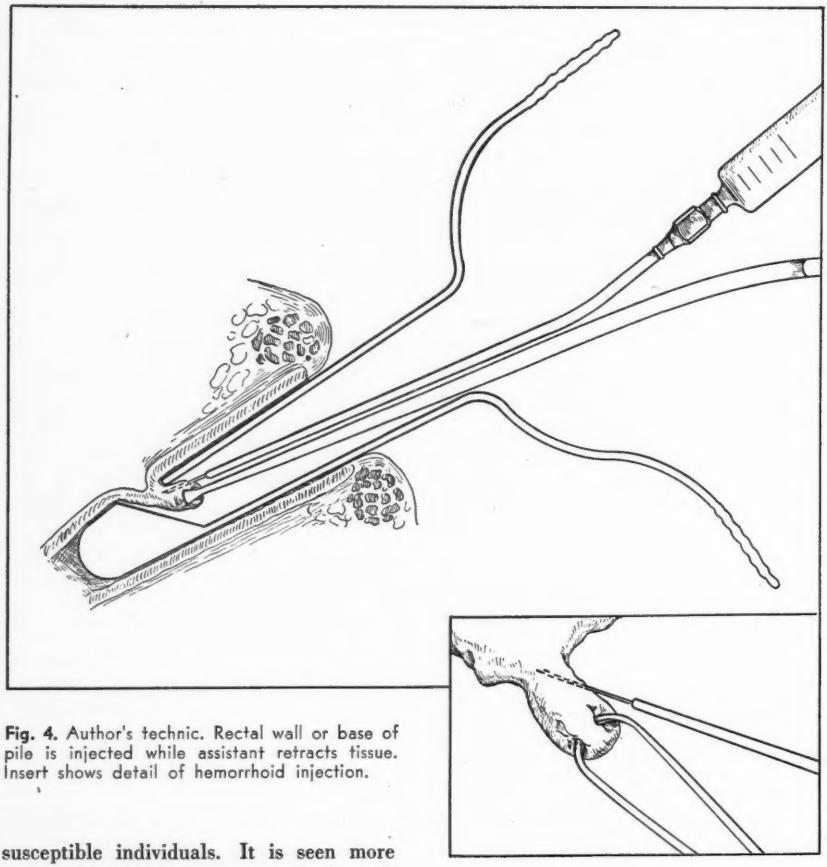


Fig. 4. Author's technic. Rectal wall or base of pile is injected while assistant retracts tissue. Insert shows detail of hemorrhoid injection.

susceptible individuals. It is seen more frequently following the use of olive oil as a menstruum. For this reason, sweet almond oil is recommended as a better vehicle for the phenol solution. Oleomas may cause embarrassing symptoms because of their size. If the lesion is low down in the grasp of the sphincters, a desire to defecate may harass the patient until the tumor shrinks. The patient may be reassured that these growths will subside after a few weeks time.

Next in order of annoyance is the occurrence of painful reactions. Sometimes these come without warning after apparently perfect treatments. It is then difficult to explain the degree of pain of which the patient complains. In occasional cases, marked reactions may be visible upon anoscopic examination. This is sometimes due to deposition of the sclerosing solution too close to the mucosa. Neurotic individuals obtaining painful reactions are a problem. Experienced operators use extreme caution in injecting hemorrhoids in such individuals. Smaller doses and deeper injections will minimize these symptoms. When a neurotic patient develops intractable pain following injection, the best course to pursue is to instill a long-lasting oily anesthetic solution like

Zylcaine* into the sphincter muscles. The resulting relaxation of spasm will provide dramatic relief.

The third, and most serious, complication is slough formation. This may occur again after an overdose of solution is injected too close to the mucosa. When such a complication arises, the symptoms may be of varying grades of severity. For the pain a deposition of Zylcaine under the slough may be advisable. The slough itself may be treated with antibiotics locally as well as systemically. It will usually heal after a protracted course of three to eight weeks, but rectal spasm may be an annoying symptom. Anesthetization of the sphincters with Zylcaine will be helpful.

* Abbott Laboratories.

Summary

1. A new injection technic for internal hemorrhoids and rectal prolapse is described.

2. Advanced cases of internal hemorrhoids are amenable to this method.

3. The technic utilizes a new type of clamp.

4. Rectal prolapse is no longer a contraindication to injection treatment. It responds to this technic.

5. The anatomical and mechanical basis for past failure in injection treatment is described.

6. This technic enables injections to be placed more deeply thereby producing sclerosis where it is needed. Its effects parallel surgical repair.

7. The clamp injection technic will increase the scope of sclerotherapy for hemorrhoids and rectal prolapse.

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133 East 58th Street

Chloromycetin in Shigella Dysentery

Chloromycetin was administered in doses of 30 mg. per Kg. of body weight to 96 patients with shigella dysentery while sulfadiazine was given in an initial dose of 2 Gm. and then 1 Gm. every 4 hours to 92 similar patients. The fever was found to disappear within 24 hours in the group receiving Chloromycetin and in an average of 2.2 days among those receiving sulfadiazine. Normal stools were passed in an average of 3.5 days and 5.6 days and the average time required for blood to disappear from the stools was 1.5 and 3.6 days, respectively. It was also found that negative stools were obtained in all 96 of the antibiotic-treated group within 4 days of treatment. However, only 83 of the 92 patients treated with sulfadiazine showed negative stools even after 5 days of treatment.

Therefore, McFadzean and Stewart, reporting in *The Lancet* [*11*:166 (1952)], concluded that Chloromycetin is more effective than sulfadiazine in the treatment of shigella dysentery.

Diverticulitis: Its Surgical Management

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A new evaluation should be given to the surgical management of diverticulitis of the colon in view of the changes that have occurred in the fields of antibiotics and supportive surgical therapy. This does not allow for the indiscriminate radical surgical attack on all phases of the disease and its complications.

It is less than 40 years since diverticulitis was recognized as a distinct clinical and pathologic entity. Carman in 1914 reported the first diagnosis of diverticulitis of the colon. There have been over 400 publications on the subject to 1951.[1]

The incidence of diverticulosis in individuals over the age of 40 is 5 per cent. 18 per cent of these people with diverticulosis have symptoms of diverticulitis.

Seventy five (75) per cent of the lesions causing symptoms were in the sigmoid.[2] Sixty-two (62) per cent of the patients were males, forty-four (44) per cent of whom were over 60 years of age.

About ten (10) per cent of those diverticuli causing symptoms require surgery. The mortality in their series was high; Immediate deaths 6.1 per cent and subsequent mortality 12.5 per cent. However, since the days of Prontosyl, long acting sulfa compounds and antibiotics have lowered the mortality even with more radical surgical procedures.

In spite of the great strides in colon surgery for carcinoma, there has been little change in the treatment of diverticulitis.

What are the indications for surgery of diverticulitis? To the present they have been solely for the complications of the disease. Namely:

I. Perforation
   (a) Acute
   (b) Chronic with abscess
II. Obstruction
   (a) Acute
   (b) Chronic
III. Fistulae
   (a) Bladder
   (b) Ileum
   (c) Cutaneous
IV. Malignancy
   (a) Inability to exclude
V. Failure of Medical Management
   (a) Rest
   (b) Chemotherapy
   (c) Empty diverticula

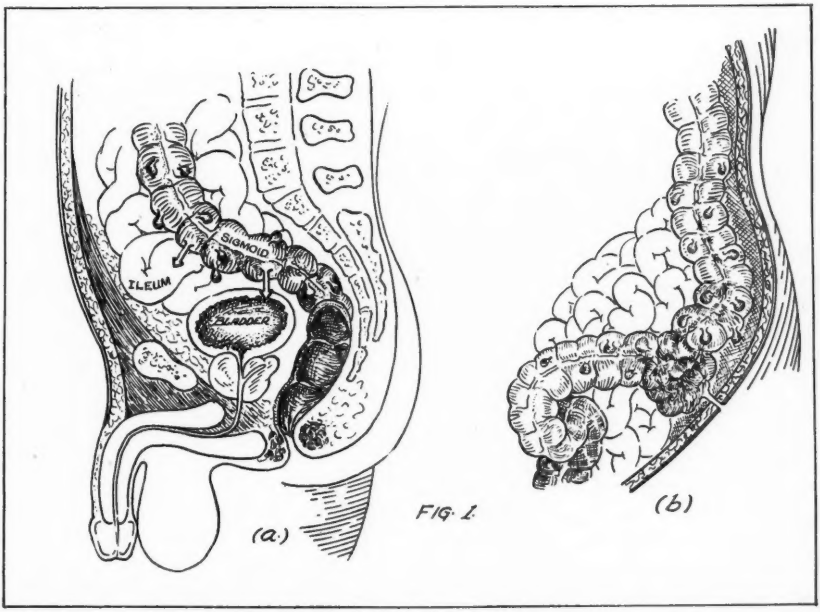
I. Acute Perforation of a Diverticulum with no previous walling off is a rare complication. This means sudden flooding of the peritoneum with colon content. Five cases were reported from Mt. Sinai Hospital of New York in a period of 10 years.[3] The onslaught is formidable and early attack on the closure is imperative. The methods we shall discuss.

Chronic Perforation with Abscess For-

mation. The presence of an inflammatory mass cannot always be interpreted as an abscess as there is usually a phlegmonous mass early which may or may not suppurate. However, when the patient definitely has an abscess the treatment is simply drainage, extra-peritoneally where possible.

II. Obstruction of the Sigmoid from a chronic inflammatory mass brings us to a situation requiring a new evaluation. We shall not include acute obstructions, as that condition requires immediate decompression. The Miller-Abbott tube can not decompress the closed colon segment when the ileo-cecal valve is competent. This is the condition in a high percentage of patients. The treatment of choice is a *defunctioning colostomy. Cecostomy* in these conditions has an extremely limited value. The cecum is available and will decompress the proximal colon. When there is complete obstruction the content will of necessity empty itself through the exit of least pressure. However, when the edema in the sigmoid subsides the fluid content will pass through its natural channel. The cecum then will merely drain off the supernatent liquid and the inflammatory site will continue to be fed by the organisms in the colon. A defunctioning transverse colostomy to the right of the midline will do all the things required, by decompressing and placing at rest all of the distal colon. Secondly, the water and electrolyte loss is less with an opening in the transverse colon, than with a cecostomy.

III. Fistula Formation into the bladder, ileum or to the skin is recognized by patients by presence of external drainage or passing gas or stool or both through the urethra. The surgical approach to this problem is now varied and should be done in stages depending upon the operator's experience and technical skill.



(a) Possible Locations of Fistulae. (b) Fistula from sigmoid colon to skin surface.

When internal fistulae are present, a colostomy has less value in decompression as the ileum bypasses the colostomy.

Internal Fistulae from sigmoid into ileum are treated by decompressing the sigmoid so that contents cannot go back into the ileum. However, the ileal contents continue to pour into the sigmoid and prevent healing. Thus, when possible, this must be resected and an end-to-end anastomosis of the ileum performed, or if the inflammatory mass is too difficult to resect, a lateral anastomosis proximal is necessary so as not to leave a closed loop of ileum. This will allow for eventual resection and closure of the sigmoid.

Bladder fistulae are closed with proximal colostomy as these continue to break down if the inflammation is great and the walls of the bladder and sigmoid continue to be infected. The recurrence of fistulae even with the interposition of omentum is due to abscess formation following surgery.

IV. To Exclude Carcinoma of the sigmoid is a most difficult procedure and often cannot be determined until the pathologist returns his report. The propressive obstruction in diverticulitis resembles that of Carcinoma. The incidence of Carcinoma with diverticulitis is very low, approximately 0.6 per cent. The incidence of diverticulitis in Carcinoma is 1.8 per cent. The fact that both lesions are found most commonly in the sigmoid leads to this confusion. However, they do have many features in common.

1. Both give change in bowel habits.
2. Both affect same age groups.
3. Both involve adjacent viscera.
4. Both have similar pictures on X-Ray except for the fact that there may be larger areas of constriction in the colon and the mucosal pattern may still be present in same areas.

V. Failure of Medical Management. Since 90 per cent of these patients respond to treatment with low residue diet, drugs, and generous lubrication, it is evident that some patients continue to have intractable symptoms without relief and must be given the benefit of surgery. The surgical approach can be grouped as follows:

In the acute perforation, one may:

a. Close the perforation and hope that a fistula will form. (Abell)

b. Remove the diverticulum (which is not an easy procedure), close the opening, then drain the site of closure. (Rankin)

c. Exteriorize the loop of the sigmoid and allow the perforation to seal itself. (Black)

d. Bring perforated bowel to abdominal wall and drain. (Marshall)

e. Close the opening and do a proximal colostomy. (Bacon)

f. Close opening and do a proximal cecostomy. (Cone Alsop) (The proximal cecostomy is inadequate as it is unable to keep the distal bowel completely at rest.)

g. Hyman and Friedlander[3] suggest a resection of the involved segment bringing out the proximal loop as a defunctioning colostomy and exteriorizing the distal loop.

The rationale is to:

1. Remove the disease.
2. Observe the subsidence of the inflammation.
3. Rule out carcinoma.
4. Visualize the part when there are no dense adhesions to contend with.
5. Extra-peritoneal closure can be done.

Boyden says it is time to be more radical and possibly do one stage resections to remove the diseased segments. This must be closely analyzed as in reviewing his case histories, one of his patients had the following situations develop since 1943:

1. Fistula, Sigmoid - to - bladder, with transverse colostomy.

2. Recurrent Fistula closed. This then formed an abscess followed by:

3. Vesico-sigmoid and sigmoid-cutaneous fistula.

4. Resection of sigmoid with end-to-end anastomosis.

5. Colostomy was closed.

6. Colostomy opened and sigmoid fistula recurred.

7. Closure of fistula. Second resection of sigmoid with end to end repair of bowel. Closure of bladder fistula.

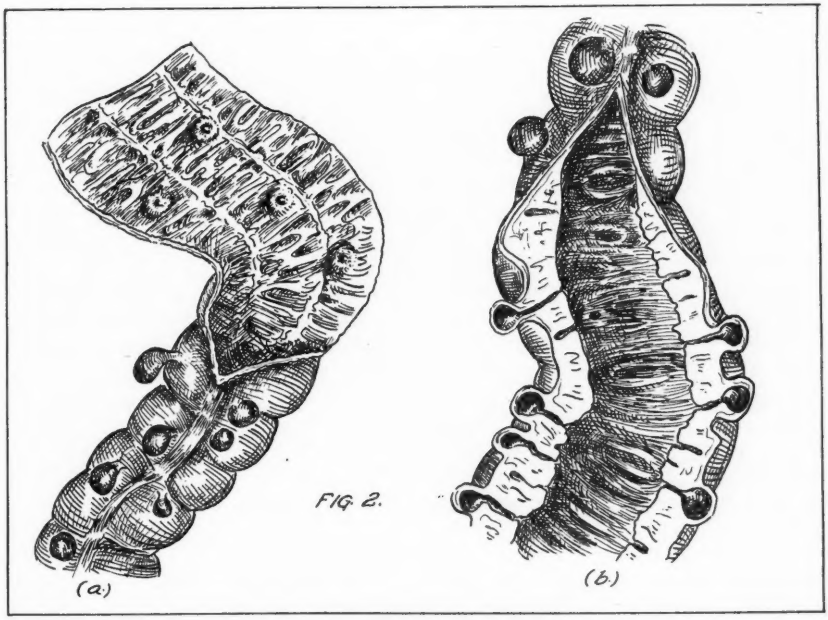
8. Last seen in 1947. Had stricture at site of anastomosis, 14 cm. from anus.

Should a sufficient time be allotted with decompression and adequate preparation these may be avoided.

It has been our policy to treat the complications of perforation, obstruction, abscess, and fistula with multople-stage operations. One-stage procedure we reserve for patients with repeated episodes of diverticulitis. Adequate preparation followed by a wide resection is the procedure of choice. When the least doubt exists about the suture line a proximal colostomy is made in the transverse colon. The suture line may pass through a diverticulum even though an open-end anastomosis is performed. In these cases we do not close the colostomy until X-Ray reveals no leak in the anastomosis.

Resections where the anastomosis is below the peritoneal reflection are drained through a posterior sacral stab incision. This has helped prevent a peritoneal abscess. One patient developed an abscess and presented bladder symptoms and phlebitis. The abscess found its way out posteriorly, all symptoms and signs subsided, and the fistula closed.

Now, is colostomy with chronic morbidity necessary? This is answered only by the selection of the adequate treatment for each patient. In the chronic recurrent infections one stage resections are safe. The defunctioning colostomy with active attack on the diseased segment with



(a) Diverticulosis of Colon. (b) Diverticulitis of Colon.

enemas and irrigations from above helps to bring the infections under control. When the dense cicatrix forms the disease may look encapsulated, only to flare up when attacked surgically. The disease has been compared with carcinoma but as a pathologic entity, the behavior is more uncertain. The minimum time allowed before closing colostomies is six weeks.

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30 North Michigan Avenue

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Earlier and More Complete Surgery in Ulcerative Colitis

Henry W. Cave and Scudder Winslow reviewed their statistics and found that up to Sept. 1951 they performed 92 ileostomies with 13 deaths, a mortality rate of 14%; subtotal colectomies in 70 patients with 8 deaths, a mortality rate of 11%; abdominoperineal resection in 28 cases with no deaths as reported in the *Pennsylvania Med. Journal* [*55:* Sept. (1952)]. The total number of patients operated upon was 140 and the total number of deaths 26—an over-all mortality of 18%.

In their earlier experience they had a 50% mortality on patients on whom ileostomies were done in the acute stage. Because of this prohibitive mortality rate they sought aid from the internist for supportive measures to tide these patients over into a chronic phase so as to reduce the over-all mortality. In spite of this there remained a sizeable minority who died in the fulminating phase. It was on this group that the authors focused their attention and they are convinced that not only earlier surgery but also more complete surgery can be successfully carried out and thereby considerably lower the mortality.

They feel that once meticulous study has ruled out other possibilities such as ambesiasis, and the diagnosis of ulcerative colitis is made, the problem is a SURGICAL ONE. If surgery is decided upon they question whether there is any longer a place for ileostomy alone. Their experience tends to point to ileostomy and resection in one stage, not only in the chronic phase but also in the acute fulminating phase. They present 6 cases of desperately ill patients on whom they performed colectomies, whereas in the former days they would have done ileostomies alone and would have believed further surgery to be a sure fatality.

Summary

1. In reviewing their cases, those in which they conservatively tried to preserve diseased bowel were their poorest results and greatest number of fatalities.

2. They stress the importance of psychogenic factors in the etiology of the disease.

3. There may be a place for vagectomy in a few selected cases—the potential dangers of its promiscuous use are noted.

4. Preservation of the sphincter muscle may be successful and worthwhile in certain few cases.

5. The evolution of the surgical attitude toward ulcerative colitis is discussed and suggests a bolder approach.

6. Once the diagnosis of ulcerative colitis is established the patient should be the surgeon's responsibility primarily.

7. Six cases are reported in detail illustrating resection in the acute phase of the disease.

Functional Restoration of the Torn Anal Sphincter

A Ten-Year Report of a Simple Surgical Method

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The importance of anal incontinence is attested to by the increasing number of articles appearing in the literature.[1,2,3] The victims of this defective mechanism are mentally distressed as well as physically impaired. It hardly need be mentioned that care on the part of the operator and fundamental knowledge of anatomy would have in many cases precluded the onset of this unfortunate post-operative complication.

The importance of an intact external sphincter may be more fully appreciated when it is recalled that Lockhart-Mummery[4] stated that a person with a hopelessly cut and damaged internal anal sphincter would still have perfect control provided that the external sphincter were intact. I propose to present herewith a reconstruction operation of the external anal sphincter which restores fully the functional control and anatomical relationships.[5]

Etiology This condition is most frequently a sequel to anal rectal surgery or obstetrical conditions, less frequently it follows various and sundry types of direct and indirect trauma ot the perineal region.[6]

I wish to refresh your memories briefly with a review of the anatomy with which we are dealing. The external anal sphincter is subcutaneous, attached in general anteriorly to the perineal muscles and posteriorly to the coccyx; there is a superficial and a deep lamina. The muscle fibers may extend anteriorly and posteriorly on each side of the anus inserting into the sphincter vagini or into the perineal body or combination of the two; they may also encircle the anal orifice either anteriorly, posteriorly or both. Additionally, they may function from a relatively fixed point such as the coccyx, central tendon or perineum, depending upon the completeness of the anal circumference which they encompass .

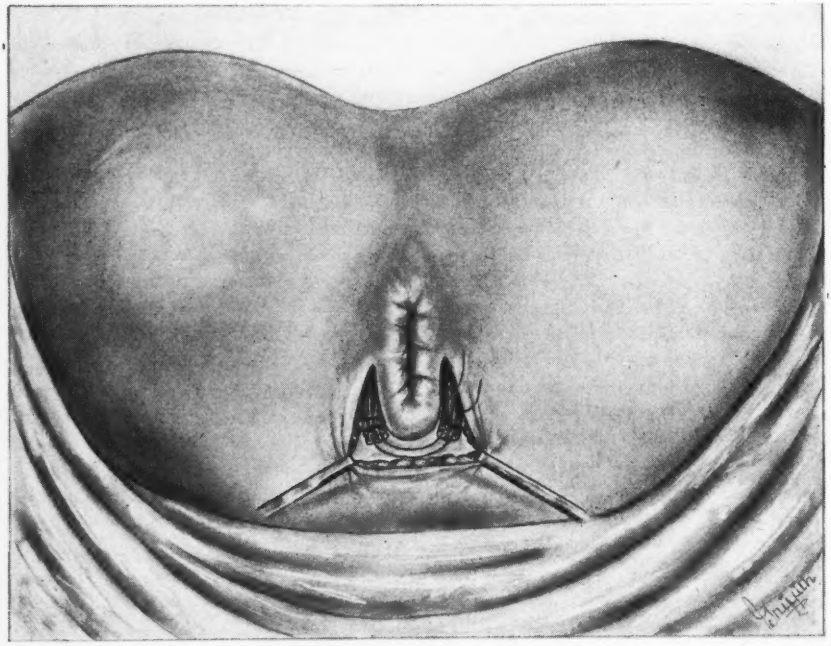
Pathology The pathological picture usually presents some degree of destruction of the perineum and varies only in that the amount of tissue presenting itself for repair following child birth injuries is more extensive than that encountered in incontinence following anal rectal fistual surgery. There is usually considerable aberration of the anatomic land marks;

From the Department of Surgery, Holy Cross Hospital.

the thick scar tissue which eventually invests most of the circumference of the sphincter creates a cicatricial contraction and consequent retraction of the perineal area. The retracted and contracted muscles can usually be palpated along the posterior or postero-lateral aspect of the anal orifice, seldom measuring more than 2 cm. or 3 cm. in length. The torn ends of the muscles usually terminate in fascial and connective tissue caps firmly attached to the intervening scar tissue by dense fibrous bands where dimpling of the perineal skin is often observed.

Preoperative Management The usual preoperative care is indicated as for other types of major surgery. Four days prior to scheduled surgery the patient receives sulfaguanidine or sulfasuxccidine, two tablets fours times a day for three days. The drug is stopped and tincture opii deodorata minimms ten, three times a day is administered on the fourth day. High colonic irrigations are given until clear. Aqueous penicillin 1,000,000 units is given intramuscularly. Morphine sulfate and atropine sulfate are given one-half hour preoperatively. I use procaine 150 mgs. with pontocaine 10 mgs. in 2 cc. of spinal fluid. This is injected intra thecally into the fourth lumbar space. In certain orthopedic anomalies or defects, parasacral anesthesia is employed. In patients who are extremely apprehensive or emotionally unstable inhalation anesthesia is used.

Operative Technique At the site of the perineal dimpling a heavy cotton No. 8 suture on a curved cutting needle is passed through the skin, subcutaneous tissue, fascia, and muscle. This suture is tied securely to approximate intimately the dimpled ends of the sphincter ani muscle. The right index finger is next



Suturing of sphincter muscle.

introduced into the rectum and with slow gentle firm massage the muscle is stretched. Massaging should be done in a lateral manner rather than antero-posteriorly until the length of the contracted sphincter muscle measures 6 cm. to 8 cm. This procedure should consume from twenty to thirty minutes and requires the services of an assistant. When it is felt that the muscle has been completely and thoroughly relaxed and stretched, the stay suture is removed. A suitable skin incision is next made over the external anal sphincter and the muscle exposed. By careful dissection the fascial connective tissue caps on the ends of the muscle are isolated and left untouched. Two interrupted No. 00 chromic catgut sutures are passed through the muscle and tied, approximating the two ends without strangulating the tissues involved in the suturing. The subcutaneous tissues are approximated and closed with interrupted sutures of No. 00 chromic catgut and the skin is closed with silk, cotton, or catgut. At completion of the operation the perianal skin, subcutaneous tissues and muscles are infiltrated with nupercaine in oil 5 cc. to 10 cc. as a measure of relief from postoperative pain. Pooling should be avoided.

Postoperatively Bowel movements are prevented by the administration of tincture opii deodorata minimms ten, three times a day for six to eight days. The patient is placed on a low residue diet for seven days after which time bulkier food is added. On the tenth postoperative day the patient is given an oil retention enema, and one ounce of mineral oil daily by mouth to encourage lubrication of stools.

Summary

A new technique is presented for reconstruction of the external anal sphincter in traumatic or operative incontinence. We feel that the procedure detailed above is of merit in properly selected cases of anal incontinence and that it offers an optimistic prognosis in many cases formerly classed as incurable.

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2355 West 63rd Street

Dr. Willard O. Thompson Honored

Dr. Willard O. Thompson, Chicago, nationally known endrocrinologist, teacher and medical author, has been honered by the Mississippi Valley Medical Society as its Distinguished Service Award Recipient for 1952. The Award, consisting of a gold medal and a certificate, was presented to Dr. Thompson at the banquet on the occasion of the 17th Annual Meeting of the Society in St. Louis recently. Dr. Thompson is Professor of Medicine, University of Illinois, Editor of the Journal of Clinical Endrocrinology and Past-President of the Mississippi Valley Medical Society. Each year the Mississippi Valley Medical Society presents a Distinguished Service Award to one of its members "who has rendered unusual and distinguished service to the medical profession."

Electrosurgery

Electrosurgery is useful both in proctology and in general surgery. Electrosurgical techniques offer rapidity of operation, ease of surgery and control of bleeding. Of course, these methods are especially valuable in ambulatory patients.

To understand electrosurgery we must first understand the modalities involved.

Conventional diathermy, a frequency of oscillation between 500 and 3,000 kilocycles per second, is more satisfactory for electrocoagulation than short-wave diathermy (10,000 to 100,000 kilocycles per second at respective wave lengths of 30 and 3 M).

Electrocauterization is the destruction of body tissues by conducted heat. The heat is produced by the passage of an electrical current through a tip or a wire of resistant metal. When this hot metal is applied to the tissues they are destroyed by the heat. This, of course, is very different from diathermy. An excellent instrument of this type is produced by National Electric Instrument Co. (Twin Control With Cautery).

Electrodessication is the destruction of body tissues by high frequency Oudin or Tesla current of conventional diathermy. The applicator is placed in contact with or within the tissue to be destroyed.

Fulguration uses the same type of current, but the electrode is held a little away from the lesion. The current then flows through the air gap between electrode and lesion as a shower of sparks.

Electrocoagulation is the destruction of tissue when deep heat is generated within the tissues by the resistance of those tissues to the flow of a high frequency current passing between two electrodes. One electrode is a large, indifferent metal contact on the patient's body near the site of operation, and the other is the small active electrode—needle, loop, ball tip, etc.—held a little away from the lesion to be coagulated, or in contact with that lesion.

Electrosurgical cutting instruments use a biterminal, undamped, high frequency current. In electrodessication a damped, high frequency current is employed.

Apparatus The conventional diathermy machine is most useful for electrodessication, electrocoagulation and fulguration.

Scarring after monoterminal destruction is less marked than after biterminal electrocoagulation. To obtain monoterminal electrodessication or fulguration attach the electrode to the terminal or an Oudin coil. Adjust the spark gap by bringing together the contacts (closing the gap), and then separating them slightly. There are two controls of current on these instruments, and the other control—the primary control—should be adjusted to a low point. After the spark gap and the primary control are adjusted, either or both may be increased or decreased to vary the intensity of destruction. A foot switch is the best way to operate the instrument.

If the operator wishes biterminal electrocoagulation, a large, flat indifferent electrode of Crooke's metal is fastened to the patient's skin near the site of operation. Be certain that the electrode is smoothly and evenly applied to prevent burns. Again, control is by foot switch, and the active electrode may be a loop, ball tip, needle, etc.

The valve type of short wave diathermy apparatus provides undamped cutting current. This is useful for electrosurgical cutting. The undamped cutting current is obtained by combining audion tubes, in-

ductances and capacities.

A good example of a radio tube modality is the Cameron Cauterodyne. The Coles Radiotome Surgery Unit is a fully rectified and filtered three tube cutting and coagulation instrument, with facility for combining D'Arsonval Spark Gap coagulation or Oudin dessication.

To cut with these instruments the cutting blade tip or needle is waved with even speed and motion across and thus through the tissues to be cut. The high frequency arc from the electrode tip disintegrates the tissues and coagulates the cut surfaces. The degree of coagulation is usually minimal, but aids hemostasis.

A word of caution should be spoken here. It is best not to depend entirely upon the hemostasis produced by such coagulation. Where there is any question, active bleeders, etc., it is best to use hemostats and ties.

Thermal Cutting Unit is simply a German silver-tip knife with a mechanism to control the degree of heat in the knife tip. Inasmuch as the tip is of pure silver, encasing a heating element, the principle of these units differs from the electrically heated wire loop instruments above described.

The Thermal Cutting Unit maintains heat better when plunged into tissue, even though the initial heat of the platinum wire instrument may be higher. Thus, the Thermal Cutting Unit is more useful for cutting purposes.

The author's Thermal Cutting Unit provides a device to vary the heat at the tip

FIG. 1.

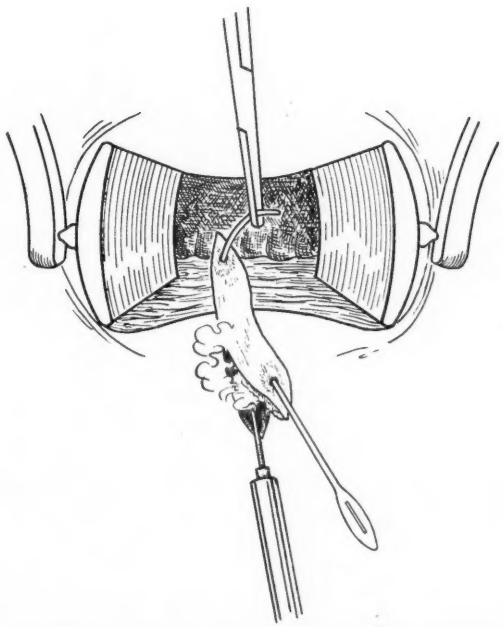

Fig. 1. Electro surgical excision of a fistula.

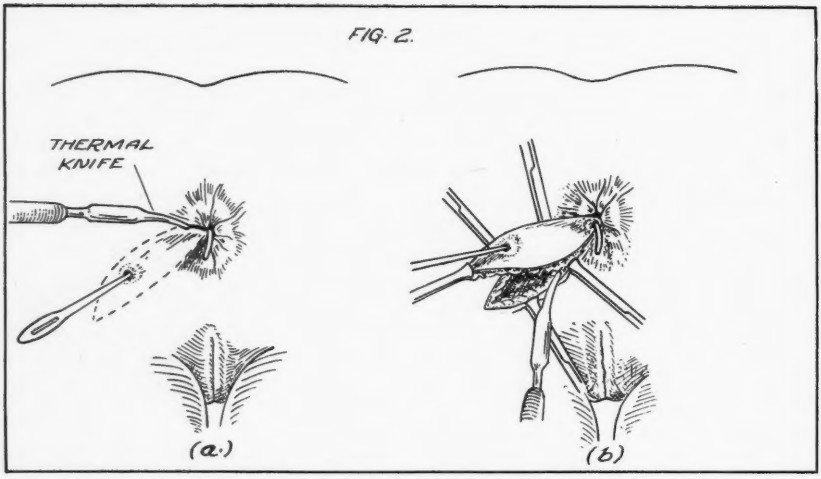

Fig. 2. Thermal knife dissection of fistula.

(a). Proposed lines of excision. (b.) Demonstrating Allis clamps on margins of wound to hold tissue taut while cutting. Note back cut of external opening and complete excision of crypt area internally.

so that it may be used for either hemostasis or cutting.

Again, hemostasis is very good, but not complete, when the cutting temperature is reduced. Never depend upon coagulation for control of bleeding except for the very small vessels. This is particularly important in the ambulatory patient. Always clamp and tie when the initial cutting current does not control bleeding. Of course, a tiny capillary ooze may be readily controlled by the hemostatic current. Anything more than this requires clamp and ligature.

Clean dissection is possible with the Thermal Cutting Unit, just as with an ordinary scalpel. The major advantages of the Thermal Cutting Unit over the scalpel are that the operation is performed in a practically bloodless field, and the heat has a sterilizing effect. Oddly enough postoperative edema is reduced.

Thermal Cutting Unit surgery and other forms of electrosurgery, lend themselves readily to ambulatory proctology. Excision of areas of cryptitis and papillitis, fistulectomy excision and drainage of perianal and perirectal abscesses and infections, excision of anal ulcer, hemorrhoidectomy, excision of benign tumors with or without endoscopy, fulguration of advanced, inoperable malignant neoplasms, excision of pilonidal disease, etc., are all readily performed by electrosurgical techniques with or without hospitalization.

Alfred J. Cantor, M.D.

Illustrations modified from Ambulatory Proctology, Second Edition. A. J. Cantor. 1952. Hoeber-Harper.

President's Page

"This momentous question, like a fire bell in the night, awakened and filled me with terror."—THOS. JEFFERSON.

During the first week of the 83rd Congress, nine bills, one of which is the "Bricker Amendment" have been introduced in Congress. They are of the utmost importance to every American citizen. The tremendous implications involved, as regards the medical profession, require the serious consideration and earnest evaluation of every physician.

The "Bricker Amendment," S. J. Res. 130, introduced by Senator Bricker of Ohio and co-sponsored by over 60 senators, is explained by one of its advocates as follows:

> "This amendment would forbid the ratification of a treaty, the terms of which are contrary to the United States Constitution, remove from the reach of the treaty-making power matters essentially within the domestic jurisdiction of the United States, and prevent nullification by treaty of existing federal and state legislation without further action by the Congress. It would provide immediate protection against the possibility of turning our country into a socialistic state by the ratification of ILO or other United Nations covenants."

The introduction of this bill was precipitated by a "move" of the United Nations to take measures resulting in the regulation of the domestic affairs of the United States by means of "treaty-law." This bill, concerning as it does, momentous and fundamental concepts of human, civil, political, social and economic rights, etc. already has stirred up much opposition to its passage and it, no doubt, will initiate a great constitutional debate. Its far-reaching implications, affecting the lives of Americans and of all peoples in the humanitarian, governmental, and in all respects, are similar in import to those which stirred up and brought about the fears, controversies and bitter debates when slavery first became an issue—an issue which became so great that it culminated in the War between the States.

The "move" referred to above was a "draft covenant," a form of "legislative treaty" "passed" by the International Labor Organization—an organization attached to the United Nations and to which the United States belongs—in June, 1952 at its meeting on "Minimum Standards of Social Security." This "treaty" has been submitted to the 65 countries of the United Nations for "ratification." The ILO "draft covenants" are said to follow the Marxist Socialist Line and this particular one provides among other things, for Socialized or State Medicine.

Authorities state that this "treaty" is Socialized Medicine, and, if ratified by Congress, former Federal Security Administrator Ewing's program for medicine would automatically become law without further ado. An American ILO employee testified before a Senate Committee that this "treaty is a complete blueprint for the Welfare State."

Space limits a general discussion of "treaty-law" and "executive agreement" by means of which the constitution has been by-passed many times. Through these channels again an attempt is being made to impose on the American people a Socialistic program which it does not want and which it has rejected. A very significant point which is ignored or rarely mentioned, and which is the "joker" in the deal, has to do with "treaty-power." It is stated in the Bill of Rights, "He (The President) shall have power, by and with the advice and consent of the Senate, to make Treaties, provided two-

thirds of the Senators present concur." Action by the House of Representatives is not necessary for such ratification. The "joker" is this: Under the rules and practices of the Senate, a single Senator can legally ratify a treaty, making it binding upon the nation as the supreme law of the land.

Controversy between Congress and the Presidency with regard to the mis-use of the "executive agreement" is a running battle. The "Bricker Amendment" proposes not only to curb treaty power but to impose limitations of the "executive agreements." Had such an amendment been part of the Constitution at the time the secret agreements were made at Yalta, it is possible that we should not now be entertaining such unwelcome guests as fear, suspicion, mistrust, confusion and their "fellow-travelers." They are "uninvited guests" and the American people felt reassured and experienced a sense of righteous relief when President Eisenhower went before Congress recently and asked cooperation in having their tenure abruptly terminated—in plain language, "kicked out."

These secret pacts which were negotiated for the so-called "welfare of the people" bring to mind the resolution adopted by the Massachusetts Anti-Slavery Society in 1843—"The compact which exists between the North and the South is a covenant with death and an agreement with hell, involving both parties in atrocious criminality and should be immediately annulled." A somewhat similar attitude was recently expressed (risking an infringement of good taste, but, at the same time, feeling that if the evidence justified an opinion should not be withheld): "The secrecy surrounding and enclosing the acts being committed had the nauseating tell-tale odor of a miscarriage of justice to all peoples professing faith in their leaders. In abetting an abortion or breathing life into an otherwise stillborn bastard, there is no fundamental difference; in concept they are both internationally immoral."

Mr. Frank Holman, a former President of the American Bar Association, says: "Through treaty-law we could find ourselves governed by United Nations Committees and commissions composed of foreigners who do not understand our concepts of individual rights and freedoms." Mr. Bricker says: "The idea that a universal Bill of Rights can be applied to several billions of people with incredibly diverse customs, political institutions, religious and standards of living is utter nonsense."

In defense of treaty-law, Mr. David Bruce, Assistant Secretary of State, says: "If we are going to do business with other countries, we have to be able to make treaties." As Jay remarked, "You cannot expect other nations to do business with us unless they get something out of the bargain." In my mind, such a statement is like comparing international diplomacy to swapping "hosses" when you've got to admit at the outset that your "hoss" has pruritus ani, an allergy to hay and a "fixation" that he is not a "hoss" but a jackass. To me this would evolve into who is swapping who—the "hoss" or the "boss."

The House of Delegates of the American Medical Association at Denver in January, recommended that the United States withdraw from participation in the ILO.

The International Academy of Proctology is the first medical specialty organization that has taken steps to bring about the communication and sharing of medical information and ideas for the common good of all peoples. It has no connection in any form with the United Nations or any of its affiliates. Its affairs and policies are aligned with the standards and principles of the American Medical Association and of the World Medical Association. As President of the Academy, I am suggesting and urging every physician, especially members of the International Academy of Proctology, to consult the November, 1952 issue of the Congressional Digest which carries a comprehensive discussion of the issue under consideration.

It is imperative that all of us keep ourselves informed with regard to socioeconomic facts; local, national and international legislation and everything of a medicosociological nature, not only in the interest of the medical profession, but for the good health of the people in whose service we have dedicated ourselves.

EDGAR SCOTT, M. D.

Perianal and Perirectal Abscesses and Infections

In this section of the Atlas of Proctologic Surgery various types of abscesses and infections will be considered. It is important to realize that most fistulae originate in an area of cryptitis, the infection then extending to form an abscess, and subsequent fistula.

Tubular ducts or glands open into the mouths of the anal crypts, and these ducts and the crypts into which they empty, are probably the point of origin of most perianal and perirectal abscesses and their subsequent fistulas.

Abscess may result from direct bacterial implantation or as a complication of a specific bowel infection (lymphogranuloma venereum or ulcerative colitis, etc.), as well as from extension of infection from a cryptitis. An occasional abscess will also be formed as a result of infection extending through the lymphatics or blood stream, or from some adjacent viscus.

In *Figure I* we see the various possible locations of perianal and perirectal abscesses.

a. indicates a submucous (intramural) abscess. In *b.* we see a high-level supralevator, (pelvirectal) abscess.

c. shows an ischiorectal abscess (more properly termed "ischioanal").

d. indicates a cutaneous abscess, while *e.* illustrates the position of a subcutaneous abscess.

A cutaneous type of abscess *(d)* readily extends to form a subcutaneous abscess, and may extend further into the ischioanal fossa.

The usual direction of extension is from a cryptitis and a subcryptic abscess, to a subsphincteric abscess, and then into the ischioanal fossa.

Figure II shows the placement of a radial incision for an ischional abscess. Notice that this incision was placed near the anus to simplify the subsequent fistulectomy by thus producing a short tract.

Wherever possible the fistulectomy should be performed at the same time that the abscess is incised and drained. This is true for all abscessess associated with fistulas.

Figure III illustrates another technique for incision and drainage of an ischioanal abscess. The dotted lines would represent the site of excision of a triangular wedge of tissue, to allow completely free drainage.

The author's personal preference would be for the radial incision shown in Figure II. If it is desired to excise a section of the roof of the abscess, it would be better to parallel the radial line of incision shown in Figure II.

Placing the area of incision and excision near the anus simplifies the associated or subsequent fistulectomy, as above described.

Figure IV indicates incision of a submucous abscess. No analgesia is required to incise through the mucosa above the pectinate line.

Of course, if sphincter relaxation is desired, caudal analgesia would be indicated.

A curved scalpel blade is usually better than the straight blade illustrated. The thermal cutting knife is still better inas-

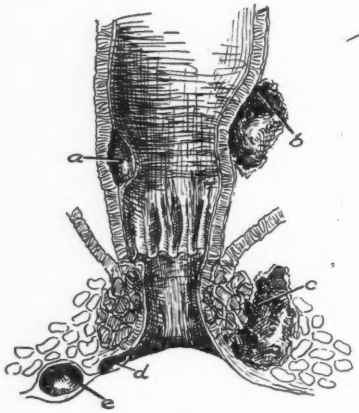

FIG. I

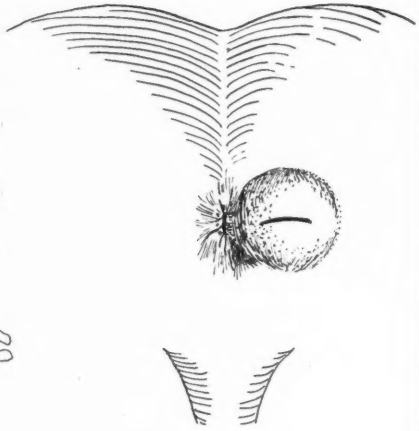

FIG. II

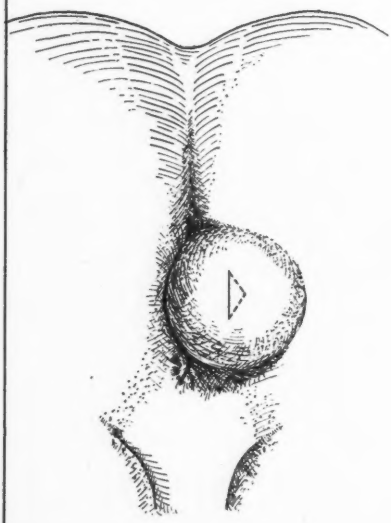

FIG. III

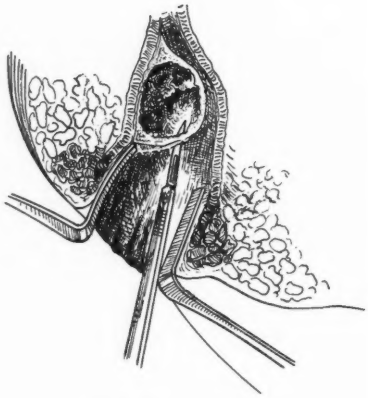

FIG. IV

much as the wound produced with the latter knife remains open longer, and the heat sterilizes the incision and seals lymphatics during the process of cutting.

Figure V a and b indicate upward submucosal extension of infection from an area of crytitis and subcryptic abscess. In figure a. we see an incomplete, blind fistula, and in figure b. we see a complete submucosal fistula resulting from such extension.

Figure VI illustrates the gross appearance of a cutaneous abscess (as illustrated in Figure I, d., in sectional view). This gross appearance might equally well represent a subcutaneous (marginal abscess).

Inasmuch as these abscesses may or may not be connected with a fistula, they deserve careful exploration at the time of surgery. Therefore, the usual technique of simple incision and drainage without exploration is not recommended.

All abscess surgery deserves caudal analgesia for complete relaxation so that the extent of the abscess, and its point of orgin may be determined.

Crypts must be carefully probed, and a probe should be passed around the interior of the abscess cavity after incision and drainage, in the search for an associated fistula.

It is best to excise or incise all fistulas at the time of the initial abscess surgery.

Figure VII. We see the conventional technique for incision and drainage of a marginal abscess. An anterior-posterior incision has been made and drainage material inserted.

It is the author's opinion that a radial incision, as illustrated in figure II, is preferable. This incision may be widened, as above described, or—indeed—the abscess cavity may be completely unroofed to provide full drainage.

The author prefers Oxycel gauze packing for hemostasis, and as a drainage wick. This packing should be removed within 24 hours.

Figure VIII indicates the technique of extra-rectal drainage of a retrorectal space abscess. A straight clamp is introduced into the retrorectal space abscess and the blade opened to obtain free drainage. Note the finger in the rectum as a guide.

An external incision is anterior-posterior in direction, in the posterior mid-line, and extends upward through the posterior fibers of the external sphincter as they converge to reach the coccyx.

If it is desired to avoid the posterior mid-line incision, incision may be made a little lateral to the mid-line, about an inch from the lateral anal verge. Upward extension of the incision is as above described in either case.

Figure IX a. illustrates a crypt hook in an infected anal crypt, and extending into a perianal abscess. A thick purulent material is seen to drain from the abscess cavity. The insert illustration shows the crypt hook in place.

Figure IX b. indicates the extent of a radial incision into the perianal abscess and infected crypt.

In *Figure IX c.* the margins of the wound are retracted to show the extent of incision and depth of the resultant wound.

It is best to unroof these abscess cavities completely to allow for adequate drainage and complete healing without residual deep space retention.

Figure X, illustrates the line of incision for a pelvirectal abscess. There is some controversy as to whether incision should be extrarectal or intrarectal.

Some authors claim good results after incision through the rectal wall at the point of bulge, at the lower end of the abscess cavity.

It is probably best to avoid intrarectal incision, for this may result in a high-lying complete internal fistula, opening above at the point of incision, extending downward through the levator into the ischioanal space, and opening below into a crypt.

Incision should therefore be extrarectal, about two inches in length, and lateral to

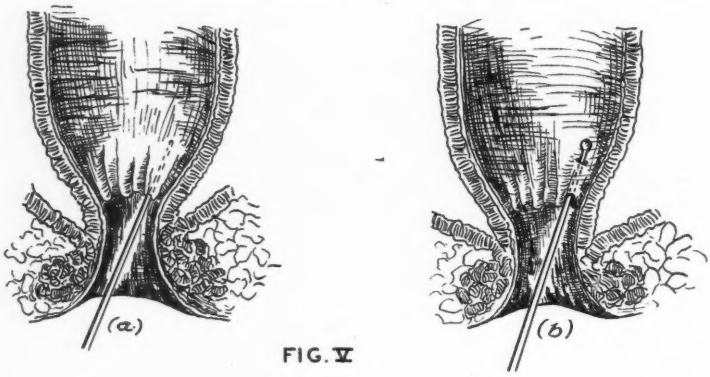

FIG. V

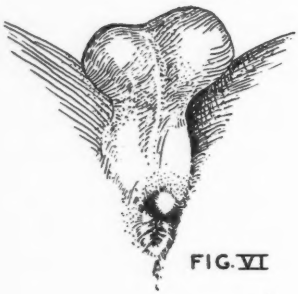

FIG. VI

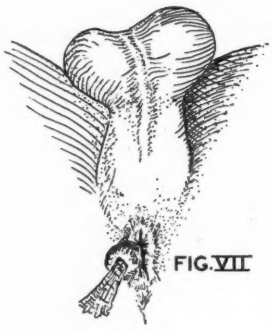

FIG. VII

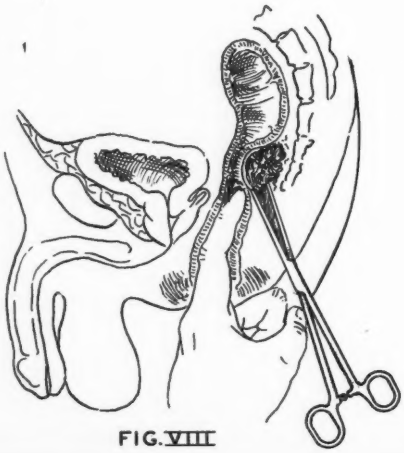

FIG. VIII

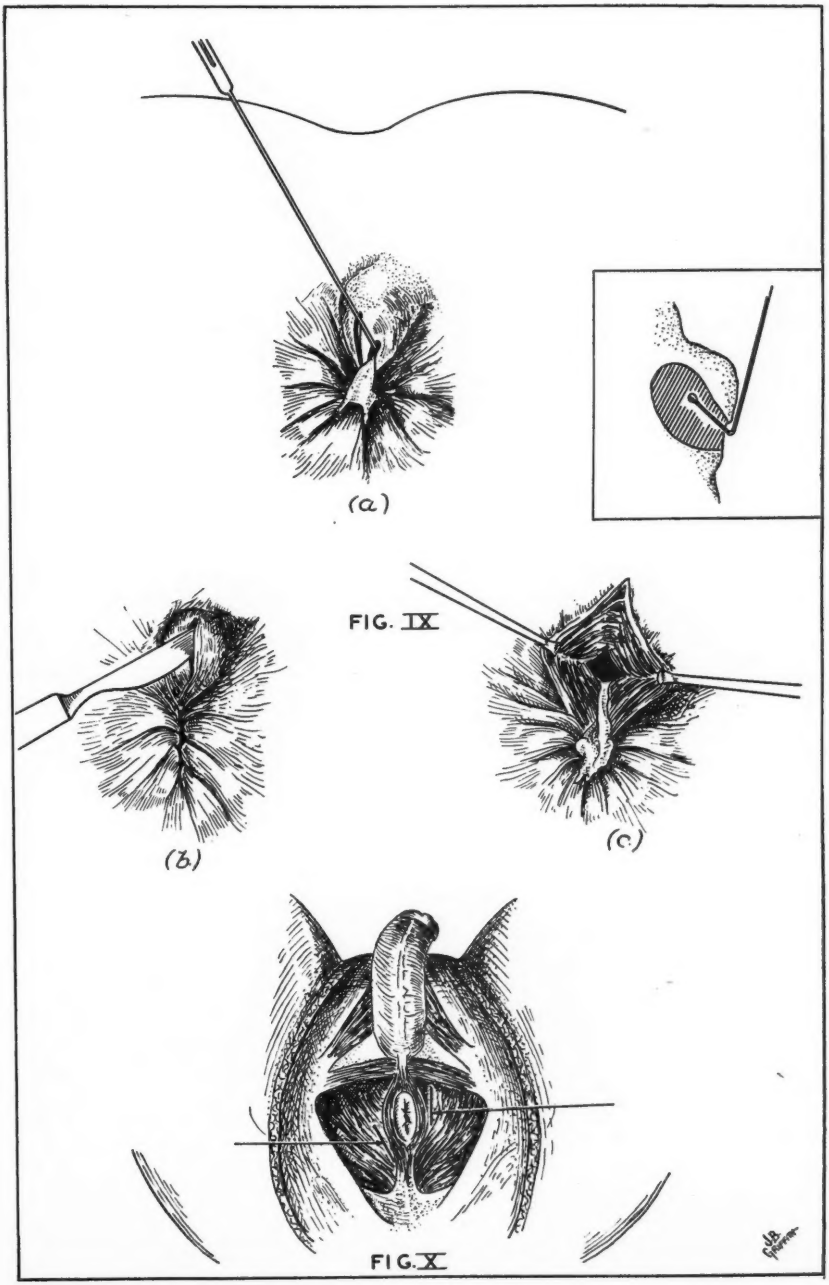

FIG. IX

FIG. X

the lateral margin of the external sphincter muscle, about one inch lateral to the verge on the involved side.

The incision is carried upward through the ischioanal fossa to the inferior surface of the levator ani muscle. A straight clamp is then pushed through the muscle, and the blades gently separated to enlarge the opening. A finger in the rectum aids the direction of dissection and prevents injury to the rectal wall.

A long cigarette drain is then inserted into the abscess cavity through the levator ani opening.

Figure XI, Hidradenitis suppurativa. In this condition the external openings illustrated are interconnected by sinuses. The insert illustration shows the elevated, rounded edges of the sinus openings and evidence of subcutaneous tissue destruction. Hidradenitis suppurativa is often incorrectly diagnosed as multiple anal fistulas or pilonidal disease with associated fistula formation. A history of axillary involvement, as well as involvement of the perianal or secrococcygeal regions strongly suggest hidradenitis suppurativa.

Complete excision is probably the treatment of choice. Excision must include the entire hair-bearing area, and should be carried deeply into the subcutaneous fat and connective tissue. Skin grafting may be necessary.

Alfred J. Cantor, M.D.

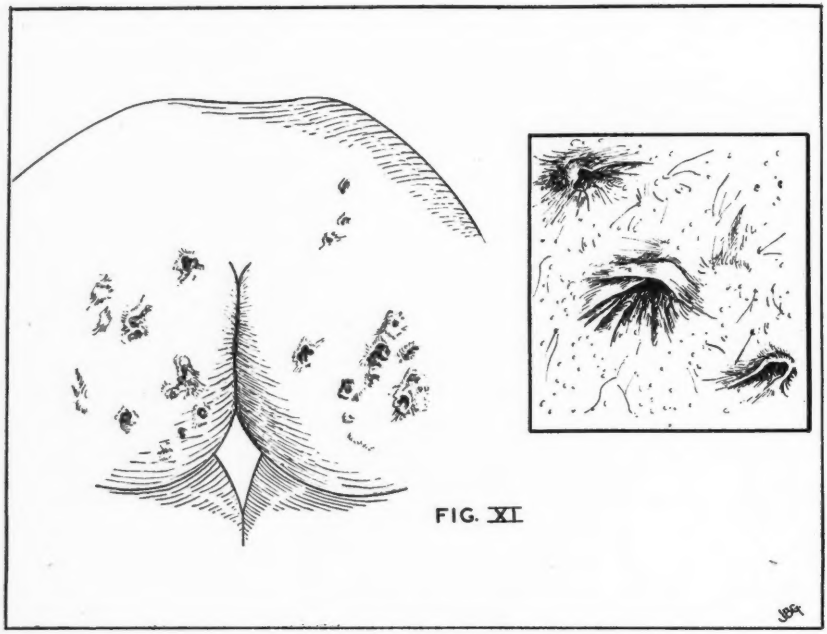

FIG. XI

EDITORIALS

Journal Lancet—Section on Pain

The Editors of the American Journal of Proctology would like to call attention to the Journal Lancet, issue of November 1952. This Journal serves the medical profession in Minnesota, North Dakota, South Dakota and Montana.

The November issue introduces a new section on pain, and an excellent article on Painful Anal Lesions and Intestinal Disease by J. Arnold Bargen and Raymond J. Jackman.

The section on Pain will be edited by John S. Lundy, of the Mayo Clinic. Pain is responsible for much human suffering, and probably brings the patient to the physician more rapidly and more often than any other symptom. It is good to see a section on pain in so excellent a journal.

Our readers will do well to review the brief, well written article by Drs. Bargen and Jackman.

Another excellent article on pain discusses the control of post-operative pain in anorectal surgery, and is written by Dr. Claude C. Tucker in the Journal of the Kansas Medical Society, Volume 53, pages 230-234, 1952. Articles such as these are particularly valuable to the proctologist, and represent the excellent research and presentation that we have come to expect from members of the American Proctologic Society.

The Editors of the American Journal of Proctology offer congratulations to the Journal Lancet for its new section on Pain.

Basic Research

One of the major objectives of the international Academy of Proctology is the development of basic research in surgery. Proctology now includes all colon surgery, and the International Academy of Proctology recognizes the particular value of physiochemical research in this field.

Accordingly, an extensive monograph on the utilization of dextrose, levulose, and invert sugar by normal and surgical patients, presented at the annual meeting of the Academy in Chicago by Dr. Jacob J. Weinstein, is included in this issue.

The surgical patient, regardless of the field of surgery, undergoes physiochemical changes as a result of operation. Indeed, most surgical patients are in a state of inadequate nutrition before surgery. It is therefore often urgent to give food substances by vein which are best and most rapidly utilized. Dr. Weinstein's monograph thus becomes an important evaluation of the three available carbohydrates for parenteral therapy.

It is through the application of basic sciences to medicine that a better understanding of the clinical picture of disease is achieved. The future of medicine lies in this direction.

Therapeutic Abstracts

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Surgical Considerations in Cancer of the Colon

Carcinoma of the colon as reported by W. M. McMillan in the *J. Internat. Coll. Surgeons* [*18*:86-88 July (1952)] causes 11% of all deaths from carcinoma in the U. S. He advises routine rectal examination as 60-70% of all rectal carcinomas can be palpated, and 92% are visualized proctoscopically. Roentgen studies are of no value in rectal lesions, though invaluable in those of the colon. Contrast studies should be employed in sigmoid and hepatic flexures. Colon carcinomas metastasise proximally unless the lymph channels are blocked.

Preoperatively, obstruction is relieved by suction or proximal colostomy, the distant colon is cleared by enemas; Sulfasuxidine is given for 4 days (and for five days postoperatively). The general condition of the patient (anemia, dehydration, vitamin deficiency, hypoproteinemia) is corrected by whole blood, plasma, protein hydrolase, fluid and electrolytes. Postoperatively the patient is given, in addition, oxygen for 24 hours and bladder drainage. For rightsided colon lesions, right hemicolectomy with end to end anastomosis is done; for lesions of the transverse colon wide excision with end to end anastomosis; for lesions of the splenic flexure left hemicolectomy from the midpoint of the transverse colon to the pelvic colon with end to end anastomosis; for lesions at or below the peritoneal reflection a Miles operation unless the patient objects to permanent colostomy; anterior resection for lesions of the pelvic and sigmoid colons. The anastomosis should consist of two layers with no tension on the suture line. The second layer should have interrupted sutures of non absorbable material.

H. N.

Benign Solitary Granulomatous Ulceration of the Cecum

Inflammatory lesions of the cecum are rare, have been found between 18-70 years, are twice as common in the male, and though nothing concrete is known about their cause, photography with polarized light reveals a highly refractile crystal that may be a talcum granule. The case reported by J. L. Smoat, J. G. Willis in the *Va. Med. Monthly* [*79*:454-456 Aug

—Concluded on page 60

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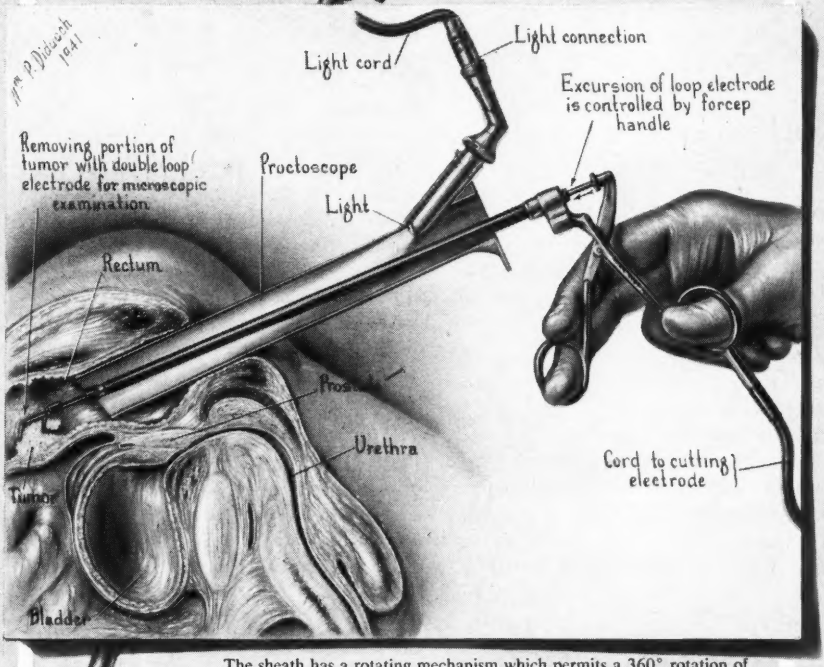

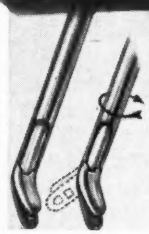

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—Concluded from page 58

(1952)] had cramp-like pain (abdominally) of gradually increasing severity for one week. There was a hard, slightly tender mass, 2-3cm. in diameter, in the region of the cecum. Barium enema showed a slight irritability of the cecum. Operation revealed a firm, scarred mass. 4x2cm., at the tip of and invading the entire wall of the cecum, with several soft nodes in the mesentery. Microscopically, an ulcer was found in the cecum extending through the muscularis, the base of which was covered by an acute inflammatory exudate. Beneath and lateral to this an extensive granulomatous inflammation was present. The authors advise and here performed a right hemicolectomy.

H.N.

Familial Colonic Polyposis. Review of the Literature and Report of Four Cases

Four instances of familial polyposis are presented in detail by Richard C. Schaffer in the *Am. Jour. Surg.* [84:477-842 (Oct.) 1952] 180 cases are stated to have been reported since Hullsick's report of 1928. In order to prevent the development of carcinoma, patients with familial polyposis of the colon should be treated before the age of thirty years and preferably before the age of twenty-five; and optimamly before symptoms have lasted for three years. The ideal time for proper treatment is of course before the onset of any symptoms. All children of patients with this disease should be examined as soon as the diagnosis is made in the parent.

The accepted treatment today is to first thoroughly fulgurate the rectal polyps present. Aften an interval of four to six weeks, a one-stage, subtotal resection of the colon is recommended, anastomosing the ileum to the rectum caudad to the area of rectal fulguration. Of course, if carcinoma is found in the rectum, a total resection is the treatment of choice. After a subtotal operation is performed, the rectum must be checked by sigmoidoscopy every six months during the remainder of that patient's life, so that when new polyps make their appearance, they may be promptly destroyed by local fulguration.

The treatment outlined agrees with modern concepts of the proper care of this interesting familial disease.

D.C.C.

Olfactory Hallucinations as a Proctologic Manifestation of Early Schizophrenia

Olfactory hallucinations of body odors and paranoid trends built upon such hallucinations have a very serious prognosis and are usually indicative of a progressive schizophrenic process. Operative procedures in such patients should not be undertaken, because of the great danger of precipitating an acute psychosis. Three illustrative case-reports are included in the article by Frank S. Forte in the *Am. Jour. Surg.* [*84*:620-622 (November) 1952].

D.C.C.

Anorectal Manifestations of Histoplasmosis

A fatal case report of disseminated histoplasmosis with lesions involving the anus and rectum is reviewed in a 62-year-old painter residing in Wilmington, Delaware, by Edward D. Weiss and Benjamin F. Haskell in the *Am. Jour. Surg.* [*84*:541-544 (November) 1952]. The histologic sections of the anal and rectal lesions revealed granulomatous areas containing the yeast form of Histoplasma capsulatum within macrophages.

D.C.C.

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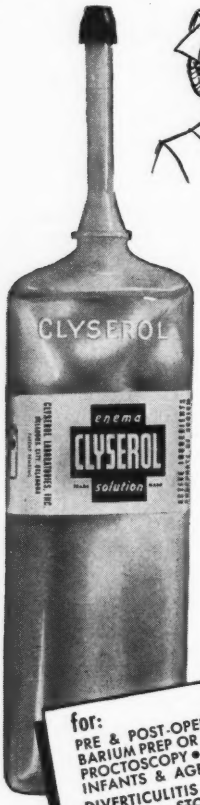

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Prescribe Desitin Hemorrhoidal Suppositories in hemorrhoids (non-surgical), pruritus ani, uncomplicated cryptitis, papillitis, and proctitis.

Composition: crude Norwegian cod liver oil, lanolin, zinc oxide, bismuth subgallate, balsam peru, cocoa butter base. No narcotic or anesthetic drugs to mask rectal disease. Boxes of 12 foil-wrapped suppositories.

Send for **samples**

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the original unmodified psyllium derivative, contains no deleterious substances. It is all Plantago ovata coating—all bulk. Consequently, *Konsyl* provides maximum bulk action per dose at minimum cost to your patients.

konsyl

A bulk producing laxative that is <u>all</u> bulk

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1. *Konsyl* is composed of the mucilaginous, jell-producing portion of blond psyllium seed. No sugars or other diluents are added and a dose of *Konsyl* supplies bulk and bulk alone.

2. The diabetic, the obese, your routine constipation cases—all can take *Konsyl* safely and without increasing caloric intake.

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4. *Konsyl*, because of its characteristic stool, promotes physiological peristalsis, acts to re-establish the normal defecation reflex.

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6. *Konsyl* does not leak or complicate the hygiene of the anorectal region. It does not cause indigestion or interfere with digestion. *Konsyl* is non-irritating and is not habit-forming.

We encourage you to write for samples for clinical comparison

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Supplied: 6 and 12 oz. cans.
Formula: 100% *Konsyl* brand coating of blond psyllium seed.

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In Idiopathic Pruritus Ani

Histar presents a combination of pyrilamine maleate (Merck), 2%, and an extract of selected crude coal tar, derived by an exclusive process of fractionation (Tarbonis brand), 5%, in an emulsified hydrophilic base, nongreasy and clean in application. The contained pyrilamine maleate is recognized as of outstanding antihistaminic value. The special tar extract in Histar is decongestant, anti-inflammatory, and potently antipruritic. These two therapeutic agents appear to potentiate and complement each other's actions in a manner which may well be termed physiologic synergism.

Histar is available on prescription in 2 oz. jars through all pharmacies, and for dispensing and hospital purposes from supply houses, in 1 lb. jars.

CONSTANTLY broadening clinical use has shown Histar to be of excellent value in allaying the torment of pruritus ani. Its contained pyrilamine maleate, reported to be considerably more potent than many topical anesthetics, together with the notable antipruritic action of its special tar extract, assures the proctologist of rapid response, when Histar is prescribed in pruritus ani, whether secondary or idiopathic.

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You may send me samples of Histar.

Dr._____

Address_____

City_____ Zone_____ State_____

PRO3

BOOK REVIEWS

FOR PROCTOLOGISTS

YOU MUST RELAX. By Edmond Jacobson, M.D., Third Edition. 282 pages. Whitelesey House, McGraw-Hill Book Co., Inc. Price $3.50.

The present volume is a further development of Dr. Jacobson's *Progressive Relaxation*. Dr. Jacobson has popularized the meaning of "relax" to be "let go." The entire volume is directed toward instructing the patient on how to "take it easy."

The author's careful study of the physiology of relaxation is well presented in this text.

This reviewer is particularly interested in the section on indigestion and colitis. This section, as well as the rest of the text, will be of interest to all proctologists.

The psychosomatic aspects of colon disease have been well developed in other texts, particularly in *The Handbook of Psychosomatic Medicine, With Special Reference to Intestinal Diseases* (Cantor). However, the relationship of relaxation to these conditions, and the necessity for relaxation in therapy, is best developed in Dr. Jacobson's text.

The author considers insomnia, high blood pressure, heart strain and coronary trouble as well.

SYNOPSIS OF PATHOLOGY. By W.A.D. Anderson, M.A., M.D., F.A.C.P. Professor of Pathology, Marquette University School of medicine; Pathologist, St. Joseph's Hospital, Milwaukee, Wisconsin. Third Edition. 334 Text illustrations and 13 color plates, 788 pages. The C. V. Mosby Company, St. Louis, 1952. Price $8.00.

This well written, abbreviated pathology text, contains 334 excellent illustrations. The present, revised third edition, offers many changes and additions. The cytologic smear diagonsis of malignancy is presented, among the additions.

As with the previous editions, the present text may be said to be intermediate between the large reference volumes and the very elementary manuals of pathology. As such, it would be particularly useful to students, but valuable as well to clinicians who are interested in fundamental medicine. It may be recommended unreservedly for teaching purposes.

YOU AND YOUR AGING PARENTS. By Edith M. Stern with Mabel Ross, M.D. United States Public Health Service, Director, Prince Georges County Mental Health Clinic. 212 pages. A. A. Wyn, Inc., New York, 1952. Price $3.00.

Even proctologists sometimes have aging parents. How to care for these parents is considered in this text. One of the authors (Mabel Ross) is a physician with the United States Public Health Service, acting as Director of a mental health clinic. Thus, the problem is considered from both the physical and the emotional aspects.

The book is practical, and does not dodge the issues. Both physicians and patients with aging parents will do well to read this book.

The basic concept presented is that the older person must be treated as an individual. The solutions are practical. Many examples are offered, providing circumstances as they actually occurred, and tested solutions that have worked.

The text is recommended.

—Concluded on page 70

Why

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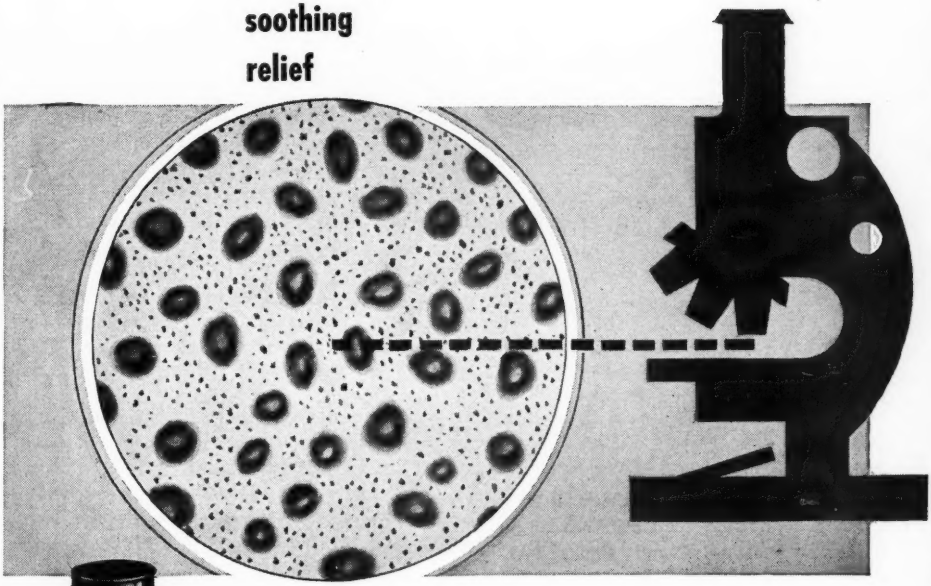
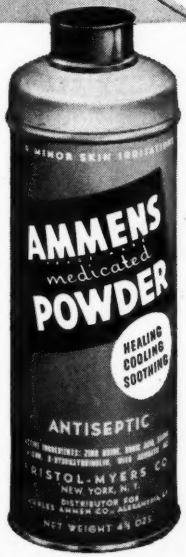
quick
soothing
relief





The starch granules, evenly dispersed in a sea of talc, provide a maximum surface area for the absorption of irritating moisture. Macerated crevices are protected and healing is promoted.

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Use and recommend Ammens Medicated Powder whenever your patient presents a skin irritated by chafing or other mechanical trauma, or when the skin is excoriated by moisture. It soothes, aids healing. Its faintly medicinal odor makes it especially suitable for professional recommendation.

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DISTRIBUTOR FOR CHARLES AMMEN CO. • ALEXANDRIA, LOUISIANA

-Concluded from page 66

PRINCIPLES AND PRACTICE OF ANESTHESIOLOGY. By Vincent J. Collins, M.D., Director of the Department of Anesthesiology, St. Vincent's Hospital of the City of New York. 528 pages with 99 illustrations. Philadelphia; Lea & Febiger, 1952. Price $10.00.

This is an excellent, well written, well illustrated text on the various phases of Anesthesia. Anesthesia is first considered generally in great detail. Blocking agents such as Curare, are described.

The next section describes Regional Techniques of Anesthesia. This is followed by a consideration of the Pharmacology and Complications.

There is also an excellent section describing "Special Considerations," and including Pediatric Anesthesia and Anesthesia in the Aged. The last section describes Intravenous and Inhalation Therapy.

The Proctologist will find all that he needs to know about anesthesia in this excellent text. There is a brief section on Epidural Anesthesia, and Caudal Anesthesia is considered under this heading. Unfortunately there are no illustrations of caudal anesthesia at this point. However, a single illustration will be found, several chapters ahead, in the section on Transsacral Block.

Anesthesia is growing rapidly, as a specialty. The anesthetist will be especially interested in this text. The general surgeon as well as the specialty surgeon will be better equipped to manage his patient if he is aware of the facts outlined in this excellent text.

EPITOMY OF THE PHARMACOPEIA AND NATIONAL FORMULARY. Issued Under the Direction and Supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Ninth Edition. Philadelphia, London & Montreal, J. B. Lippincott Company 1951. 255 Pages. Price $2.50.

The ninth edition of the Epitome is issued under the direction of the Council on Pharmacy and Chemistry of the American Medical Association. The Epitome follows the same pattern of writing as Useful Drugs. However, the Epitome naturally covers many more drugs than those selected for the Useful Drugs compilation.

For reference purposes, therefore, the Epitomy may be more valuable. However, for clinical use, Useful Drugs offers the practicing physician a completely adequate selection.

THE PRINCIPLES AND METHODS OF PHYSICAL DIAGNOSIS. By Simon S. Leopold, M.D., Associate Professor of Clinical Medicine, School of Medicine and Graduate School of Medicine, University of Pennsylvania; Director of the Teaching of Physical Diagnosis, School of Medicine; Chief of the Thoracic Clinic, Hospital of the University of Pennsylvania. 390 Illustrations with 19 Color Plates. W. B. Saunders Company, Philadelphia & London 1952.

This text devotes full attention to the physics of examination, yet correlates physical signs with physiologic and pathologic changes. The text is well written and very well illustrated. The supplementary chapter on Acoustic Principles of Sounds from the Thorax by S. Reid Warren, Jr. is worthy of comment.

This type of text is particularly intended for the medical student. However, it would do no harm for the clinician to review physical diagnosis at frequent intervals. We tend to depend too much upon Roentgen and laboratory studies, and too little upon our own senses.

The section on Examination of the Abdomen will be of particular interest to the gastroenterologist and proctologist. The proctologist will also find an excellent chapter on the Anus, Rectum and Rectosigmoid Colon.

The teacher of medical students will find the text particularly well arranged, and well organized.

NOTES: AFTER ANORECTAL SURGERY

CONVENIENT NEW WITCH HAZEL DRESSING REDUCES DISCOMFORT

Clinically accepted

The use of a moist witch hazel dressing after hemorrhoidectomy and other anorectal operations has long been standard practice with leading surgeons and clinics[1,2]. Tucks are such moist dressings, in convenient, ready-to-use form.

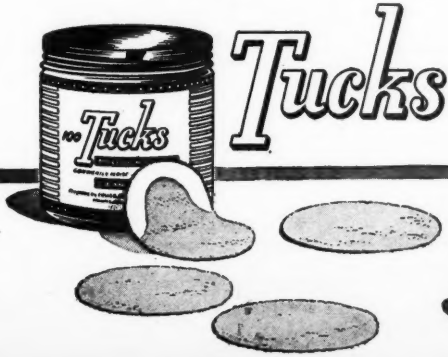
1. Rankin, F. W., Bargen, J. A. and Buie, L. A.: The Colon, Rectum and Anus, W. B. Saunders Co.
2. Buie, L. A.: Proctoscopic Examination and the treatment of Hemorrhoids and Anal Pruritus, Mayo Clinic Monographs.

How used

When used as a dressing, a folded Tucks pad is placed between the buttocks, next to the wounds. Because Tucks are pads of pure, soft outing flannel saturated with a solution of witch hazel (hamamelis water) 50% and glycerin 10%, they are comforting and soothing. When Tucks are used routinely, the wounds in many cases are reported to appear unusually dry and clean. We suggest you try Tucks after your next anorectal operation.

How supplied

Tucks are provided in jars of 100. A supply for trial will be sent you upon written request. Address Dept. A2, Fuller Pharmaceutical Co., 715 So. 10th St., Minneapolis 4, Minn.



Tucks ... *mildly medicated cleansing cloths*
Benadex • Benzocones • Hydrocil
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PHARMACEUTICAL COMPANY

LETTERS TO THE EDITOR

—Continued from page 14

"Annual Report on Stress", deserves careful attention:

"University De Montreal
P.O. Box 6128,
Montreal, P. Q.
November 4th, 1952.

To the Editor,
The American Journal of Proctology,
43-55 Kissena Blvd., Flushing 55, N. Y.

re: *Request for reprints concerning stress and the adaptive hormones.*

Dear Sir,

In perusing current issues of "The American Journal of Proctology", we note that an ever increasing number of its articles deals with problems pertaining to research on "stress" and the so-called "adaptive hormones" (ACTH, STH, corticoids, adrenergic substances, etc.).

We are writing you because, in our opinion, the success of research in this complex and rapidly developing field largely depends upon the prompt availability and evaluation of relevant publications, a task for which we should like to solicit the assistance of your readers.

In 1950, our Institute has initiated the publication of a series of reference volumes entitled "Annual Reports on Stress" (Acta Medical Publishers, Montreal) in which the entire current world literature is surveyed every year (usually between 2000 and 4000 publications). Up to now, we had to compile the pertinent literature partly from medical periodicals, monographs, abstract journals and partly from reprints sent to us by the authors themselves. Of all these, reprints proved to be the best source of data which we felt deserved prompt attention in our annual re-

—Concluded on page 76

Painless Rectal Surgery!

Freedom from pain is the goal of the proctologist.

RECTOCAINE offers freedom from pain both before and after surgery!

RECTOCAINE permits immediate ambulation (Ambulatory Proctology—Cantor)

RECTOCAINE may be used in hospital or office to treat or prevent pain!

RECTOCAINE offers rapid return to work for the patient!

RECTOCAINE

The Oil Soluble Anesthetic of Choice

Boxes of 6, 25 or 100, 5 c.c. sterile ampoules
Also in ointment or suppositories

C. F. KIRK CO., 521 West 23rd Street, New York 11, N. Y., U. S. A.

SAMPLES AND LITERATURE ON REQUEST

Proctologist* reports on 'QUOTANE' as an anti-pruritic in ano-rectal discomfort

his findings:

1. good to excellent relief from itching and burning in 92% of his patients.

2. no sensitivity or other untoward reaction.

**Ramsey, W. H.: Am. Pract. & Digest of Treatment 3:834 (Oct.) 1952.*

QUOTANE† *Ointment*

S.K.F.'s Remarkable New Topical Anesthetic

(Also available as Lotion)

Smith, Kline & French Laboratories, Philadelphia

†T.M. Reg. U.S. Pat. Off. for dimethisoquin hydrochloride, S. K. F.

MEDICAL MANUSCRIPT EDITING SERVICE

One of the principal objects of the American Medical Writers' Ass'n is "to help maintain and advance high standards of medical literature." To accomplish this, the English construction and composition of many medical manuscripts should be improved. Many authors of medical subjects would like to have their manuscripts corrected and clarified. The Association has made arrangements with a well known school of journalism associated with a university having a medical school, where such manuscripts will be reviewed by an instructor in the school. This is a service which is available to all members and fellows of the Association. Only manuscripts intended for medical journals or kindred publications from which the authors receive no fees and which do not exceed 5000 words, will be accepted. It is not a commercial service and does not concern itself with the selling of manuscripts, ghost writing or the compiling of bibliographies.

There is a nominal charge for this service based on the number of words in the manuscript (in counting words, count every word in the entire manuscript including title, headings, etc.) as follows:

1000 words or less	$4.00
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Manuscripts must be sent via first class mail, typewritten in English, double or triple spaced with wide margins at top, bottom and both sides, written on one side only and accompanied by return first-class postage. It is preferred that manuscripts be mailed flat. The number of words in the manuscript must be stated in the upper right hand corner of the first page and the fee for the service, including return postage, enclosed. The author should be sure to retain a carbon copy of his paper.

The service is primarily designed for members of the Association but the Association will permit non-members (especially those who have never written for publication before) to submit two manuscripts for editing at 50 per cent increase in the above rates. About ten days time will be required to edit a manuscript.

All manuscripts should be sent to—

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209-224 W.C.U. Bldg. Quincy, Ill., U.S.A.

(A pamphlet giving further details of the service will be gladly sent on request.)

LETTERS TO THE EDITOR

—Concluded from page 74

ports. Hence, in the past, we have sent out several thousand individual reprint requests to authors of whom we knew that they are currently engaged in research on stress and allied topics. Even this procedure did not give us the wide coverage which would be desirable.

It is evident that in order to insure prompt inclusion of publications in the annual reports, these surveys must develop into a cooperative effort between the authors of original papers and the reviewers. This cooperation was greatly enhanced of late by the publication of announcements, in several medical journals, encouraging investigators interested in stress research, to send us their reprints for this purpose as soon as they become available.

We would be grateful if, by the publication of this note, you would also bring this problem to the attention of the readers of "The American Journal of Proctology".

Very sincerely yours,
Alexander Horava, M.D.,
Co-author of the "Annual Reports on Stress".
Hans Selve, M.D., Ph.D.,
D.Sc., F.R.S. (C),
Professor and Director of the Institute of Experimental Medicine and Surgery.

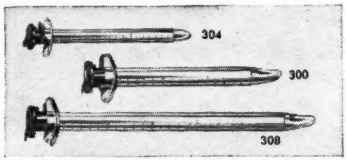
The letter, of course, is self explanatory. Our readers will note that Dr. Selye is a member of the Board of Editors of the American Journal of Proctology, and head of the Section on Experimental Medicine and Surgery. For the benefit of the Medical profession generally, the reprints requested by Dr. Selye should be made available to his staff. Stress research is of fundamental importance in medicine, and this is an unparallelled opportunity for many of our readers to take an active part in advancing such research. The physician who writes an original paper thus has an opportunity to contribute twice to the progress of medicine when he forwards a reprint of his paper to the authors of the Annual Reports on Stress.

THIS COMPLETE

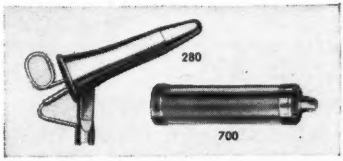
WELCH ALLYN RECTAL SET

fills every need of specialist or GP

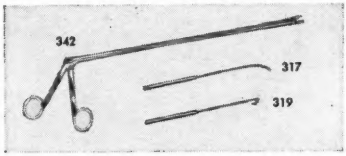
The importance of *complete* rectal examination to detect possibly precancerous lesions or abnormalities is now widely recognized, and more and more physicians are equipping themselves with rectal instruments. General practitioners are learning what proctologists have long known: that Welch Allyn rectals are superbly designed and made for efficient diagnosis and treatment, ease of use and durability. A particular favorite is this No. 318 set, priced at $169.50, whose contents are shown in detail below. **No. 318A, with built-in aspirator $179.50.**



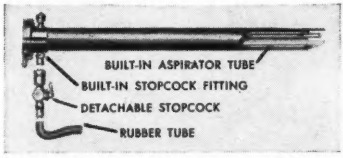
No. 308 sigmoidoscope, No. 300 proctoscope and No. 304 infant proctoscope, distally illuminated for brilliant, glare-free field of view, with tapered and curved obturator tips for easy passage.



No. 280 medium anoscope, with brilliant, shadow-free illumination, offset obturator handle. No. 700 large battery handle, with rheostat control, a dependable source of current for all Welch Allyn instruments.



No. 342 biopsy punch, a well balanced, stainless steel instrument. No. 317 rectal probe and No. 319 rectal hook.



Welch Allyn sigmoidoscopes are available at $10.00 extra per instrument with built-in aspirator tube for smoke removal, complete with stopcock as shown in exploded view, above.

Set No. 318 also includes inflating bulb and cord (for attachment to battery handle, battery box or transformer) and extra lamps. Smaller Welch Allyn rectal sets are also available, and individual instruments may be purchased separately.

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Newer Medicinals

Aureomycin Calcium Oral Drops, Aureomycin Calcium Syrup, Lederle Laboratories, New York 20, N. Y. New oral forms of aureomycin. **Dose:** As determined by physician. **Sup:** Oral drops.

Bacimycin Tablets, Walker Laboratories, Inc., Mt. Vernon, N. Y. in the treatment of infantile diarrhea of bacterial origin, intestinal amebiasis and in the reduction of the incidence of post-operative infections in colon surgery. **Dose:** Adult, 1 to 3 tablets 4 times daily. Infants, 1 tablet every 6 hours. Children, 1 or 2 tablets every 6 hours. **Sup:** In bottles of 30 tablets.

Bacitracin Ointment (Hart), Hart Drug Corp., Miami 37, Fla. In the prevention of infection following minor cuts and abrasions. **Dose:** Apply 1 or 2 times daily. **Sup:** In tubes of 1/2 oz.

Caladryl Cream, Parke, Davis & Co., Detroit 32, Mich. For treating various burning, itching, infected skin conditions. **Dose:** As determined by physhician. **Sup:** In tubes of 1 1/2 oz.

Codempiral Capsules, Burroughs Wellcome & Co., Inc., Tuckahoe 7, N. Y. To relieve pain associated with anxiety and tension. **Dose:** As determined by physician. **Sup:** In bottles of 100 capsules.

Desoxets, Abbott Laboratories, North Chicago, Ill. Wherever a sympathomimetic amine is indicated along with adjunctive multivitamin treatment. **Dose:** One tablet upon arising, another an hour before lunch. **Sup:** In bottles of 100 and 1,000 tablets

Ediol (Emulsion), Schenley Laboratories, Inc., Lawrenceburg, Ind. Oral fat emulsion providing high caloric concentration for quick weight gain. **Dose:** Two tablespoonfuls 4 times a day. **Sup:** In 1-pt. bottles.

Eskacillin 500 (Liquid), Smith, Kline & French Laboratories, Philadelphia 1, Pa. In infections due to penicillin-sensitive organisms, espically the pneumococcus, hemolytic streptococcus, certain staphylococci and the gonococcus. **Dose:** Children up to 8 years, 250,000 units every 8 hours, or 500,000 units every 12 hours; Older children and adults, 500,000 units every 8 hours, or 1,000,000 units every 12 hours. **Sup:** In 2 flu. oz. bottles.

Gelfoam Powder, The Upjohn Co., Kalamazoo 99, Mich. For oral use as an aid in attaining hemostasis in gastro-duodenal hemorrhage. **Dose:** Two tablespoonfuls of product swallowed with the aid of 200 cc. of water or saline containing 1,000 units of thrombin, followed every 2 hours by 2 tablespoonfuls of product swallowed with the aid of 50 cc. of water containing 250 units of thrombin; aluminum hydroxide gel in tablespoonful doses every 3 hours, transfusions of whole blood, bed rest, and the liquid diet of the conservative treatment are also employed. If this treatment doesn't control hemorrhage in 48 hours, surgery must be employed. **Sup:** In paper cans containing 10 Gm.

Geratose, E. L. Patch Co., Boston 80, Mass. For the prevention and treatment of hypercholesterolemia, atherosclerosis, liver damage and in other conditions where lipotropic and nutritional factors may be beneficial. **Dose:** Eight to 10 capsules per day, or as determined by physician. **Sup:** In bottles of 100 and 500 capsules.

Neo-Penil. Smith-Kline & French Laboratories, Philadelphia 1, Pa. In the treatment of those infections which respond to repository penicillin. **Dose:** Intramuscularly only, as determined by physician. **Sup:** In boxes of 10 vials.

—Concluded on page 80

hemorrhoids

pruritus ani

perianal dermatitis

proctitis

new, effective, faster, safer treatment

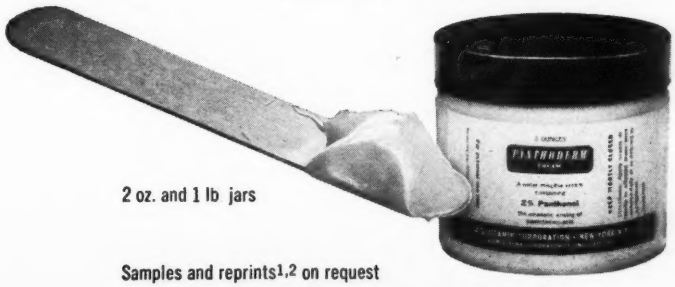
panthoderm cream

first and **only** topical therapy to contain panthenol

CLINICALLY EFFECTIVE — new studies[1,2] show that topical panthenol (analog of pantothenic acid) "favorably influenced the course of various ulcerative and pyogenic dermatoses. A majority healed and many showed various degrees of improvement." Even long standing conditions resistant to other therapy seem to respond to Panthoderm Cream which . . .

- **relieves pain and itching**
- **promotes granulation and healing**

PLEASANT TO APPLY — non-staining, smooth-spreading; nontoxic, relatively non-sensitizing.



2 oz. and 1 lb jars

Samples and reprints[1,2] on request

U. S. VITAMIN CORPORATION
Casimir Funk Laboratories, Inc. (affiliate)
250 East 43rd St., New York 17, N. Y.

NEWER MEDICINALS

—Concluded from page 78

Mucotin Liquid, The Harrower Lab., Inc., Jersey City 4, N. J. In peptic ulcer therapy, in hyperacidity, gastritis, and in antibiotic therapy for relief of nausea. **Dose:** As determined by physician. **Sup:** In bottles of 6 and 12 fl oz., also in tablet form, bottles of 50 and 100 tablets.

Myciguent Cream, The Upjohn Co., Kalamazoo 99, Mich. For conditions caused by gram-positive or gram-negative organisms. **Dose:** From 2 to 5 times daily. **Sup:** In tubes of ½ oz.

Novogran Capsules, E. R. Squibb & Sons, New York, N. Y. Vitamin preparation with vitamin K analog added, for appropriate therapeutic use of physiologic stress, such as serious illness, fractures, widespread burns, etc. **Dose:** As determined by physician. **Sup:** In bottles of 100 capsules.

Pargran Capsules, E. R. Squibb & Sons, New York, N. Y. Vitamin preparation with vitamin & analog added, for use in general maintenance, in short-term illness and injury, and after convalescence is well established. **Dose:** As determined by physician. **Sup:** In bottles of 100 capsules.

Plebilin Plus, The Paul Plessner Co., Detroit 26, Mich. To control bloating, belchin gepigastric distress, post-prandial fullness, flatulence, anorexia, constipation, nausea, and other symptoms of functional indigestion due to a deficiency of digestive factors, and/or biliary stasis; chronic cholecystitis, pancreatitis, cholangitis, postcholecystectomy discomforts. **Dose:** One or 2 tablets 3 or 4 times daily. **Sup:** In bottles of 100 and 1,000 tablets.

Procaine Penicillin G in Aqueous Suspension, Winthrop-Stearns. Inc., New York 18, N. Y. In two new dosage forms, one of 600,000 units and the second containing 1,000,000 units. **Dose:** As determined by physician. **Sup:** In sterile disposable Ogle syringes in boxes of 5's.

Theridol Kapseals, Parke, Davis & Co., Detroit, Mich. In the treatment of dietary deficiency states with vitamins at therapeutic levels. **Dose:** As determined by physician. **Sup:** In packages of 30, 100 and 1,000 Kapseals.

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